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ABSTRACT

Longitudinal studies of disabled persons are relatively uncommon, and studies which have measured objectively the degree to which the disabled sustain their level of functioning after rehabilitation are nonexistent. This study investigated the concept of sustention as it relates to the provision of rehabilitation services. Based on a longitudinal model, a procedure was developed to assess sustention levels and to study possible relationships between sustention and selected client and rehabilitation process variables. The study considered vocational indices of rehabilitation success, as well as social indicators such as family life, community activities, and self-perception. (BH)

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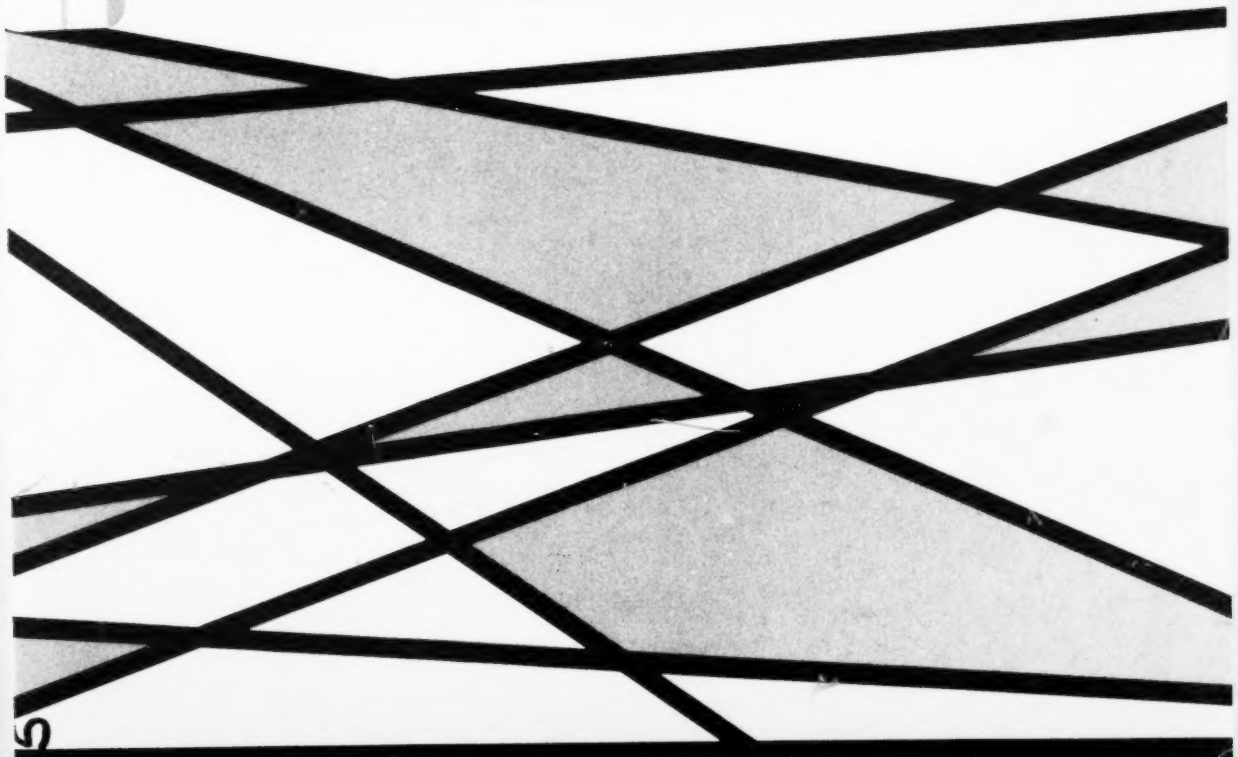
Wisconsin Studies in Vocational Rehabilitation
Monograph XVI
Series 2

Rehabilitation Client Sustention: A Longitudinal Study

Dennis A.Gay
Kenneth W. Reagles
George N. Wright



The University of Wisconsin
Regional Rehabilitation Research Institute
Madison
1971

Significant Findings for the Rehabilitation Worker

- a procedure was developed to provide a reliable measure of the long-term effects—sustention—of rehabilitation services on a client's vocational and personal adjustment.
- the scale used to determine rehabilitation sustention is available to administrators and researchers, along with other Wisconsin scales on rehabilitation feasibility and client satisfaction.
- traditional vocational rehabilitation services are effective in helping both the medically and culturally handicapped overcome their vocational handicaps to employment and sustain their rehabilitation status over an extended period of time:
  (a) 76.2% (147) of all the 193 subjects in this investigation either maintained (n = 109) or increased (n = 38) their vocational and personal adjustment from closure to longitudinal follow-up; and
  (b) only 23.8% (n = 46) of the total group showed regression in rehabilitation status from closure to longitudinal follow-up.
- the culturally-disadvantaged subjects were as successful as the medically handicapped in sustaining their rehabilitation level from 2 to 4 years following case closure.
- no systematic relationship was found between the amount of time since successful case closure (21 to 49 months) and sustention: the level of rehabilitation achieved at closure was stable for at least 4 years when groups of clients were considered.
- vocational adjustment (e.g., hours worked weekly, earnings, income source, work status) is the major contributor to rehabilitation sustention:
  (a) for all subjects collectively, weekly earnings averaged approximately $14 at acceptance, $57 at closure, and $66 at follow-up;
  (b) for the group of subjects which increased its rehabilitation level from closure to follow-up, there was a 57.8% increase in weekly earnings;
  (c) for the group of subjects which maintained (i.e., no significant change) the same rehabilitation level from closure to follow-up, there was a 22.8% increase in weekly earnings; and
  (d) for the group of subjects which regressed in rehabilitation level from closure to follow-up, there was a 30.4% decrease in weekly earnings.
- the primary goal of rehabilitation counselors in aiding the client to *vocational adjustment* is supported by the data reported above.
- personal-social adjustment also contributes to rehabilitation sustention:
  (a) the majority of rehabilitants (87%) were optimistic at longitudinal follow-up about their qualifications to get and hold employment; and
  (b) following services there was a dramatic increase in socialization, i.e., the client spent fewer hours in activities by himself and more time in participation in activities with others.
- the level of rehabilitation sustention was *not* significantly related to most client characteristics studied:
  (a) sex, marital status, number of dependents, and level of education variables were not significantly related to sustention; and
  (b) however, some trends did emerge for client characteristics: those subjects who continued to increase in rehabilitation adjustment level after closure were younger, had higher IQs, and scored higher on arithmetic and reading achievement tests; the majority of those subjects whose adjustment level decreased after closure were females, widowed, divorced, or separated, and had less than a high school education.
- the only rehabilitation *process* variable related to sustention was maintenance costs: more funds spent for maintenance services were associated with continuing increases in rehabilitation adjustment at time of follow-up.
- those receiving public assistance at follow-up were primarily mothers with dependent children; because such mothers may have unexpected barriers to continued employment, the counselor's function at follow-up should be emphasized since continued monitoring is indicated for selected cases.

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Rehabilitation Client Sustention: A Longitudinal Study

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PREFACE

The Research and Demonstration Grant Program of the Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare (HEW), supports a research institute in each of the ten regions of the Department as a facility for scientific studies in rehabilitation. The basic purposes of these institutes have been defined as follows: (a) to develop a program of core research in an area important to vocational rehabilitation; (b) to provide consultation to state vocational rehabilitation agencies (DVR) on operational problems subject to research; and (c) to participate in the conduct of operational research at the request of state DVR agencies. Thus, the programs of the institutes were designed to provide a comprehensive and programmatic attack upon the major research problems in vocational rehabilitation, with each institute providing a unique contribution through its core research and through utilization of regional and local resources and professional talents.

In HEW Region V, the Regional Rehabilitation Research Institute (RRRI) was established at the University of Wisconsin in October, 1963, for a program of core research on the roles and functions of the DVR counselor in the client rehabilitation process. Since rehabilitation counseling is a new field at a challenging stage of professionalization, it is of major importance that counselor services be well-founded on research-based knowledge. Broadly stated, the objective of the RRRI is the advancement of the research foundations of rehabilitation with special attention to the central professional person, the counselor who is responsible for the delivery of services.

Within the University, the RRRI is affiliated with the Rehabilitation Counselor Education Program. This affiliation assures the professional resources and participation of the rehabilitation counselor education staff and students. Staff studies, doctoral dissertations, and master's theses have made a substantial contribution to the core research of the Institute. In turn, the Institute facilitates research-oriented training and continuing interest of graduate students in rehabilitation research.

The research model of the Institute was designed to serve in problem finding, selection, and classification, as well as in information retrieval and dissemination. It is based on the premise that the client rehabilitation process is influenced by counselor services in interaction with the context of these services and with the handicapping characteristics of the client. In the model, there are three dimensions: counselor services, context of services, and handicapping characteristics. Nine counselor services are conceptualized: (a) case finding, (b) eligibility determination, (c) counseling and vocational planning, (d) provision of restoration services, (e) provision of client training, (f) provision of supportive services, (g) employment placement, (h) consultation provided to other agencies serving the handicapped, and (i) public relations. Contextual covariables include selected attributes of: (a) the client, (b) the counselor, (c) the agency, and (d) the community. Handicapping conditions are classified as: (a) physical, (b) emotional, (c) mental, and (d) cultural.

Identification of potential projects for Institute core research is derived from three basic sources: (a) expressed needs of rehabilitation counselors (as determined by surveys, direct consultation, and regional planning), (b) the DVR agencies' requests which are consistent with the objectives of the Institute core research and have operational application, and (c) systematic search of the relevant literature to identify important and researchable problems.

Two major types of investigations are sponsored—one, the development of measures of the functions and their covariables, and two, the assessment of their interrelationships. The core research of the Institute is supplemented by satellite projects relevant to rehabilitation counselor functions. The *Wisconsin Studies in Vocational Rehabilitation* represents the principal means of disseminating the Institute's research findings to rehabilitation practitioners and researchers.

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FOREWORD

Longitudinal studies of disabled persons are relatively uncommon; and studies which have objectively measured the degree to which the disabled sustain their level of functioning (in a holistic sense) after rehabilitation services are nonexistent. Many follow-up studies have examined how many rehabilitants were still working "X" months after closure, or what happened to their mean earnings "X" years later, etc. But there has been no study to date which has used a composite measure of client functioning (in vocational and extra-vocational realms) to determine how lasting the effects of rehabilitation services are. Therefore, this study investigated the neglected area of the sustention of rehabilitation functioning through a longitudinal model of measurement.

The concept and measurement of sustention is based on the results of a previous study of the UW-RRRI, the development of a scale to measure the impact of rehabilitation services upon clients (Reagles, Wright, & Butler. A Scale of Rehabilitation Gain for Clients of an Expanded Vocational Rehabilitation Program. XIII. 1970). Obviously, before it can be said that a client has sustained a certain level of rehabilitation, it must first be demonstrated that he gained something as a result of receiving vocational rehabilitation services; this can be assessed by the Rehabilitation Status Scale.

In practice, the responsibility for determining gain rests with the rehabilitation counselor. He decides at the outset whether the need for change (gain) requiring interventive services exists, how such change can best be brought about, and, finally, when rehabilitation services have succeeded and should be terminated. If the counselor's decision for case termination (closure) is based upon completed successful service, the assumption is that the client realized some measure of gain.

Unlike the evaluation of gain, the evaluation of sustention is even more difficult for the counselor. Sustention concerns the period of time from successful case closure to some later point of follow-up; during this time, the counselor and the agency have little or no contact with the client—at least not enough to systematically collect

information to determine the level of rehabilitation sustention which exists. Unfortunately, the only contact the agency and the counselor usually have with a client after the termination of services occurs if the client needs additional help because previous services were not completely successful or if the client has contracted a new disability. Therefore, to meaningfully assess sustention, some comprehensive, objective measurement of a rehabilitated individual's vocational and extra-vocational level of performance at follow-up is required.

The present study investigated the concept of sustention as it relates to the provision of rehabilitation services. A procedure, based on a longitudinal research model, was developed to assess sustention levels and to study the possible relationship of selected client and rehabilitation process variables to sustention. The measurement of sustention has facilitated the evaluation of the long-term impact on the clients of the Wood County Project: Wright, G. N., Reagles, K. W., and Butler, A.J., An Expanded Program of Vocational Rehabilitation: Methodology and Description of Client Population, *Wisconsin Studies in Vocational Rehabilitation,* University of Wisconsin Regional Rehabilitation Research Institute, Madison, *2,* XI, 1970. The results reported in the present monograph contribute additional evidence to support the feasibility and desirability of extending vocational rehabilitation services to all individuals who have substantial handicaps to employment—including those dependent persons who are chronically underemployed or unemployed due to social, financial, and/or educational disadvantage. The basic research question in the present study referred directly to the counselor's function at *follow-up* (see the UW-HRRI research model described in the Preface). This study not only considered the vocational indices of rehabilitation success, such as earnings and hours worked, but also social and extra-vocational indicators—increased client involvement with his family, community and organization activites, perceptions of self—of client status at longitudinal follow-up.

The principal author of this report, Dennis A. Gay, was a doctoral student in rehabilitation counseling and research assistant at the University of Wisconsin. Portions of this monograph are from Dr. Gay's dissertation *[Rehabilitation Sustention of Successfully Reha-*

bilitated Clients in an Experimental Vocational Rehabilitation Program. (Doctoral dissertation, University of Wisconsin) Ann Arbor, Michigan: University Microfilms, 1971. No. 71-291]. Dr. Gay is now an Assistant Professor in the Department of Special Education, University of Northern Colorado, Greeley.

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INTRODUCTION

The American state-federal vocational rehabilitation program has had an impressive history, covering half a century, in rehabilitating the medically disabled. Legal restraints and inadequate financial support, however, have limited the number of persons receiving services to a small percentage of the vocationally handicapped and dependent population. The Wood County Project was designed to demonstrate the potential benefits of extending services to all handicapped persons and to define administrative guidelines for the transitional and operational phases of the expanded program. The underlying thesis of the Project was that established (traditional) techniques developed over the years by state rehabilitation agencies—individualized client services using agency and community resources—can be effectively applied for the vocational adjustment of a much broader range of unemployed and underemployed people. The caseload of an experimental agency was expanded *vertically* to include a larger number of the handicapped with medically-defined disabilities and *horizontally* to extend services to persons with cultural (nonmedical) handicaps.

The Project, covering the five-year period ending June 30, 1969, was sponsored by the U.S. Department of Health, Education, and Welfare through a Research and Demonstration grant (RD-1629) to Adrian E. Towne, Director, Division of Vocational Rehabilitation (DVR), Wisconsin Department of Health and Social Services. The University of Wisconsin Regional Rehabilitation Research Institute (UW-RRRI) conducted the research as reported in this monograph series. All client services were provided by DVR. Grant funds for the Project—including research, client service demonstration, and the establishment of two new workshops—totaled 1.5 million dollars for the five-year period.

Definition of Terms

Client group referred to one of the following: (a) *medically handicapped:* having a vocational limitation associated with a

physical and/or mental (retardation or emotional) disability; or (b) *culturally handicapped* or *disadvantaged* (the two terms are used synonymously): having a vocational limitation associated with a social, financial, and/or educational disadvantage. Culturally-disadvantaged clients who also had a mental or physical disability were classified as medically handicapped.

Experimental area referred to Wood County where the expanded program was established and operated by the Wisconsin DVR as the demonstration site or experimental agency for the Project. Several *control areas* in which Wisconsin DVR offices, or traditional agencies, were located were designed for comparison purposes: (a) *primary control area:* Eau Claire County; and (b) *other control areas:* Wood County (pre-Project status), selected counties, the state of Wisconsin, and the nation as a whole.

Project Settings

Wood (1960 population, 59,105) and Eau Claire (1960 population, 58,300) counties, the experimental and the primary control counties respectively, and the other control counties involved were generally rural-urban in character, having primarily Caucasian populations of similar size; 15% to 20% of the families in each county had annual incomes below $3,000. The economies of these areas were based both on industry and agriculture. In general, there were good educational, vocational, and medical resources available for rehabilitation.

Agency Administration and Staffing

The Wood County agency, established and operated as a special district office of the Wisconsin DVR, was provided with the necessary staff and budget to meet the responsibilities of an expanded case-service load. Agency services (e.g., counseling, training, job placement) were identical to those available throughout the state-federal rehabilitation program (except for an additional provision for relocation expenses of Wood County clients). Traditional procedures for delivery of services were followed, including geo-

graphic assignment of the counselors who worked as generalists; none of the Wood County counselors served as a specialist in terms of handicap group or function in the rehabilitation process. Throughout the Project's administration, the agency operated in accordance with statewide DVR regulations and personnel policies; case processing and coding were consistent with state and federal regulations. Some extra time demands were made on the staff for data collection.

The staff members of the Eau Claire County (control) agency were, in general, better educated and had had more professional experience than those in Wood County. In addition, the employment pattern in the Eau Claire agency—established for many years as a permanent DVR office—was more stable.

Research Procedures

The research plan was formulated to assess the impact of the expanded program on (a) the client, (b) the agency, and (c) the community. Details of the research design and operational plan were developed in an initial six-month planning period, with special attention given to the collection of pre-Project control data. In the first 24 months, instruments unique for the Project's purposes were developed. In addition, an on-site data collection office was established, and data processing procedures were refined. Concurrently, the experimental agency was expanded at a pre-planned rate: personnel were employed and oriented, workshop facilities were established, and public relations efforts accelerated to an appropriate level. Thus, the third and fourth years of the Project represent the period of an established, maximized agency operation, i.e., it operated with full staff and budget as the "model" expanded agency. During the fifth and final year, no new clients were added to the existing data bank and agency operations were reduced.

Sources of data concerning the impact of services on the client included the UW-Wood County Project Client Test Battery, composed of published instruments measuring educational achievement, intelligence, and perceptions, and instruments developed by the UW-RRRI staff as indicators of client characteristics. Each applicant

was referred by his counselor for the Test Battery. After acceptance, a client's handicap in significant life areas was rated by his counselor, who also kept a record of the time and nature of his work with and for individual clients. Approximately six months after closure, the follow-up instruments of the Test Battery were administered by representatives of the UW-RRRI staff.

The impact on the agency was assessed by examination of the DVR and UW-RRRI records concerning changes in staff, type of caseload, services rendered and purchased, and costs resulting from the expansion of the program. During 1966 and 1967, counselors from both counties also completed a record of contacts made with or concerning clients during the rehabilitation process.

The impact of the expanded program on the community was assessed by data collected before the Project's initiation and at its termination concerning community members' knowledge of and attitudes toward rehabilitation and the handicapped. In particular, financial records were examined for a benefit-cost analysis and changes in public assistance expenditures.

Continuous and up-to-date research data records were provided by a model for the establishment of a data bank. Concurrently, a coding guide for all variables was completed to initiate the data-collection model. A Client Master File was constructed to include client demographic characteristics, test performance, and expenditures by type of service, e.g., counselor time, purchased resources.

Description of Client Populations

Records from fiscal years 1965-66, 1966-67, and 1967-68 indicated that 1,734 persons (521 culturally handicapped and 1,213 medically handicapped) were referred in Wood County and 850 in Eau Claire County. Of these, 1,553 were accepted—336 culturally- and 788 medically-handicapped persons in Wood County and 429 medically handicapped in Eau Claire. Closed as rehabilitants were 265 culturally- and 756 medically-handicapped clients in Wood County and 317 in Eau Claire County. As of June 30, 1968, the

number of clients remaining in each status was as follows: (a) referral: Wood—cultural, 59, medical, 194; Eau Claire—62; (b) accepted: Wood—cultural, 77, medical, 194; Eau Claire—224; and (c) in training: Wood—cultural, 27, medical, 24; Eau Claire—17.

To describe the client populations, a comparison was made of specific handicap subgroups, viz., the culturally, physically, and mentally handicapped, on relevant demographic variables.[1] These comparisons indicated that some characteristics were associated with all subgroups: (a) race: white; (b) number of dependents: less than three; (c) primary source of support: family and friends; (d) secondary disability: none; (e) employment outlook: having difficulty in finding a job or not looking; no post-rehabilitation job available; (f) intellectual ability: average intelligence (many culturally-handicapped clients scored at the 69th percentile on the Raven's PM, however) and client perception reported as "average" or "above average"; and (g) educational achievement: higher grade-level equivalent performance in reading than in arithmetic.

Characteristics differentiating the subgroups were the following: age, sex, primary source of support, source of referral, marital status, onset of handicap, driver's license and automobile ownership, employment status, highest grade completed, and educational achievement. For a definitive description of the Wood County Project, the reader is referred to the introductory monograph of the series (Wright, G. N., Reagles, K. W., & Butler, A. J. An Expanded Program of Vocational Rehabilitation: Methodology and Description of Client Population. Monograph XI, 1970).

[1]It should be noted that individuals with mental or physical disabilities were excluded from the culturally disadvantaged classification and systematically classified as medically handicapped. This assignment underlies some of the subgroup differences reported in this section—particularly the differences between the culturally disadvantaged and the mentally handicapped, one-third of whom were mentally retarded. There is a particularly high prevalence of disability among the culturally disadvantaged, but theoretically these people (with disabilities) are entitled to public rehabilitation services under traditional eligibility criteria. The exclusion of the culturally disadvantaged with medically-defined disabilities from the culturally-handicapped population in the Wood County Project permitted analysis and interpretation of data concerning the horizontal expansion of the rehabilitation program.

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Rehabilitation Client Sustention:

A Longitudinal Study

STATEMENT OF THE PROBLEM

Ideologically, the goal of vocational rehabilitation services to handicapped individuals is to facilitate a recipient's "total" rehabilitation. Inherent to the philosophy of rehabilitation is the belief that, as a result of receiving services, a successfully rehabilitated person will maintain his adjustment status into the future—that (barring change in conditions, particularly any new disablement) his previous handicapping condition or status will not recur and there will be no necessity for reiteration of services. This philosophical tenet is comparable to the Hebrew proverb which states that one should "help so that help is not needed again."

Research in rehabilitating handicapped persons teaches, however, that the assumption that one-time service inevitably results in permanent rehabilitation is unrealistic and that additional services after closure are sometimes indicated (Wright & Trotter, 1968). A number of variables, most of which have eluded sound research, act independently and in concert to complicate the task of permanently rehabilitating handicapped people. An example is the complex set of circumstances constituting cultural and social deprivation.

If vocational rehabilitation is to fulfill its growing commitments, a continuing attempt must be made to establish new and better guidelines for the effective provision of services. Consistent with this attempt is the need for researchers to systematically investigate and evaluate the lasting effects of existing services on successfully rehabilitated clients through a longitudinal model. Subsequently, salient research findings must be communicated to the practitioner so that he may (if necessary) alter his methods to enhance the sustention of his clients' rehabilitation success.

The literature and legislation in the field of vocational rehabilitation is replete with evidence of the importance of providing services to the handicapped. Although there is little question about the value of these services, there is debate with respect to (a) the specific services that should be provided, (b) the manner in which these services should be provided, (c) the specific individuals who should receive these services, and (d) the extent that rehabilitation

success is maintained following the termination of services. Basic to these issues is the concept of sustention—the degree to which the effects of successful rehabilitation services are maintained or enhanced over a period of time. Though some attempts have been made to assess short-term sustention by conducting follow-up studies on rehabilitated clients, meaningful guidelines for the provision of services based on sound longitudinal research have not been established.

An understanding of the dimensions and correlates of rehabilitation sustention can improve the rehabilitation process. First, counselor-client planning can be improved through better knowledge of the lasting effects of specific services. And second, if it is possible to identify high risk closures, preventive measures—such as selective long-term follow-up of these clients or the continuation of rehabilitation surveillance—can be used.

The present investigation was designed to aid in assessing the long-term effects of an expanded program of vocational rehabilitation (the Wood County Project)[1] on successfully rehabilitated clients. The long-term effects were examined in several areas. First, rehabilitation sustention or the lack of sustention was assessed through a longitudinal model. Second, the various handicap groups were compared within the sustention categories and within each item of a scale measuring rehabilitation level; particular attention was given to the culturally-handicapped as compared to the medically-disabled clients. Third, the relationships among categories of rehabilitation sustention (i.e., whether the rehabilitation status achieved by the individual at closure continued to improve, remained stable, or deteriorated with time) and relevant client and process variables were investigated. And fourth, a study was made of the items of the Rehabilitation Status Scale at three points of measurement—acceptance, closure, and follow-up—to determine what is being sustained.

[1]A brief description of the Wood County Project is presented in the Introduction to this monograph.

Definition of Terms

The concept of sustention rests on another rehabilitation idea—client change or *rehabilitation gain.* That is, before it can be said that a client has sustained a certain "level of rehabilitation," it must first be demonstrated that the client gained something as a result of receiving rehabilitation services—that he attained an adequate vocational and extra-vocational level of performance.

Rehabilitation level or status (the two terms are used synonymously) is the adjustment of an individual at any time before, during, or after the receipt of vocational rehabilitation services; operationally, it is the individual's performance on the 20-item Rehabilitation Status Scale (Reagles, Wright, & Butler, 1970b). *Rehabilitation gain* or client change is the difference between any two measures of rehabilitation level. For example, were clients administered the Rehabilitation Status Scale before and after receiving rehabilitation services, higher scores following rehabilitation would indicate a more positive status, or rehabilitation gain; conversely, lower scores following rehabilitation would indicate a negative status, or rehabilitation regression.

Sustention refers to the extent to which individuals maintain their rehabilitation level following the termination of services. Operationally, sustention is measured by the difference in a client's performance on the Rehabilitation Status Scale from the point of termination of services until longitudinal follow-up, from two to four years later. It is important to point out the difference between rehabilitation "gain" and "sustention"; *gain* is the change in a client's vocational and extra-vocational adjustment which occurs between acceptance for services and closure while *sustention* is the state of maintaining (by a rehabilitated client) his adjustment for an unspecified period of time following the termination of services.

Sustention group refers to the classification system developed by the researchers to differentiate between the existence or lack of sustention at follow-up and the various degrees of sustention. Three categories were established: (a) for those individuals whose rehabilitation level at closure continued to increase after closure, (b) for

those individuals whose closure level was maintained, and (c) for those individuals whose closure level decreased.

Other definitions indigenous to the Wood County Project are presented in the Introduction of this monograph. In addition, words and concepts related to a specific discussion are explained as they are introduced.

Research Questions

The following research questions were posed for this study:

(a) Is the Rehabilitation Status Scale (Reagles et al., 1970b) adequate for the development of a procedure to measure rehabilitation sustention?

(b) How will the culturally-handicapped clients compare with the traditional or medically-handicapped clients with respect to rehabilitation sustention?

(c) What client characteristics or rehabilitation process variables are significantly related to rehabilitation sustention?

(d) What are the characteristics of the individuals in the three different sustention groups?

(e) What is being sustained, i.e., how do the different sustention groups perform with respect to specific items of the Rehabilitation Status Scale at the various times of measurement?

(f) What are the implications of the findings of this research for the role and functioning of vocational rehabilitation counselors?

REVIEW OF THE LITERATURE

Individuals selected for public vocational rehabilitation services have had a highly successful rate of employment at closure. However, rehabilitation can be judged "successful" only if its effects are lasting; a rehabilitation client whose vocational success and personal adjustment diminish as a function of time since the termination of services cannot finally be considered "successfully" rehabilitated. The question in the present study is how lasting is the vocational adjustment of the client reported at the time of closure. This section of the monograph reviews research studies which have been conducted on the lasting effects of rehabilitation to determine whether "sustention" is possible or merely an unrealistic assumption.

The literature written concerning the lasting effects of rehabilitation services is sparse. And that which has been written does not always provide definite conclusions about sustention, since the studies described in the literature had different research emphases and did not follow a longitudinal design. However, some of the studies conducted are helpful to the extent they reported what actually has happened after individuals were closed as "rehabilitated," and have illuminated various rehabilitation variables affecting ultimate success.

Tinsley, Warnken, Weiss, Dawis, and Lofquist (1969) studied former DVR clients whose cases had been closed from two to six years. They found that 81% of those who had been closed as "rehabilitated" were employed at follow-up, an increase of 53% over the employment rate at acceptance. And, 45% of all the former clients (both rehabilitated and non-rehabilitated) had professional, technical, managerial, clerical, or sales jobs at follow-up—compared to 40% who were similarly employed at closure. Three-fourths of the rehabilitated former clients had held no more than two different jobs since closure; all together, 91% of those who were employed at the time of follow-up were working full-time (35 or more hours per week) at their jobs. And the average monthly earnings of these former clients increased approximately $70 per month between the time of closure and follow-up.

A study by Eber and Stein (1967) provides a focus for assessing rehabilitation sustention as a product of various rehabilitation process elements. The authors asserted that rehabilitation programs often "neutralize" those characteristics of a rehabilitation client which can interfere with his vocational success. They found from their research that there is apparent deterioration in the lasting effects of rehabilitation services over the one-year period used in their study. In other words, no matter what "neutralizing" effect rehabilitation services had, when the individual was left on his own after closure, his original characteristics tended to be neutralized as the length of time after closure increased. The point is, Eber and Stein concluded, "that the influence of rehabilitation on the behavior and vocational success of the client is quite effective, but some of that success is temporary, and the client tends to reassert that basic nature which was represented prior to the time he came into the rehabilitation program, as soon as the counselor withdraws his support and leaves the client to his own devices" (p.13). Since the goal of the rehabilitation counselor for the client must be to maintain (sustain) any gain beyond the time of closure, and hopefully throughout his life, the implications of these statements are surprising.

The implication of Eber and Stein's work is that if an instrument predicting vocational potential could be constructed, clients' ultimate rehabilitation outcomes could be determined early in the rehabilitation process. And those whose sustention would be predicted as low could then receive selective or alternative services, continuing rehabilitation support long after regular rehabilitation services might have been terminated, and, thus, increase their rehabilitation sustention.

In an earlier study, Eber (1966) described factors he found related to client "adequacy" at the time of follow-up. Those clients who were white, married, younger, and who had one or more dependents, "adequate" work histories, some earnings prior to acceptance, and who were not applicants for disability insurance, were those who maintained their rehabilitation "adequacy" from closure to follow-up.

Zivan (1966) reported the results of a one-year follow-up conducted on clients treated in a program for delinquent boys. Those who received experimental treatment in a comprehensive vocational rehabilitation program emphasizing both residential and after-cure phases, integrated with other treatment services, tended to have more favorable attitudes and behavior toward work than the boys in the control group. Zivan attributed this shift in attitudes to the boys' positive vocational training. Previously, in 1959-60, the same children's institution had conducted a follow-up survey of boys discharged from its in-care services to determine the nature of their community adjustment; it indicated that 75% of the boys had made an "adequate" to "good" adjustment two years after services were terminated and they had returned to their communities. However, the researchers did not indicate whether the boys in this previous follow-up had received experimental treatment.

Former prisoners were surveyed in the first 12 months following their releases in a study by Ericson and Moberg (1968). These researchers found that those who had been given the experimental services (including a team approach to assist with vocational adjustment) adjusted better than those who did not receive this special service, and that the adjustment of those who received "much" of this type of treatment was even "better." However, upon subsequent follow-up, 13 to 31 months after their release from prison and therefore after the termination of any rehabilitative service, 14 of the 52 experimental clients who had been "successful" at the earlier follow-up had dropped into the "failure" category, while only 6 of the 45 non-treated prisoners followed this pattern. A possible explanation for this, Ericson and Moberg noted, was that the discontinuation of treatment at the end of the 12-month therapy period had a detrimental effect on many of the clients. Experimental clients who had received "little or no" services had outcomes which were similar to those receiving "none." Those receiving "much" of the experimental treatment, however, tended to be somewhat more successful at the end of their first year of parole in terms of employment and recidivism rates, but not in terms of personality-adjustment change.

Young and Stavros (1967) interviewed midly retarded and disadvantaged clients after they had received intensive support services. The interviews were conducted once when they were a little over 17 years old and again when they were 18 years old. In general, the youths were found to have greater earnings and longer job tenure than their peers who had not received services. Also, the youths who had received the intensive support services were more highly rated by their employers in traits relating to social relationships than were their counterparts. The treated youths generally were more realistic about their job aspirations and expectations than were the youths in the control group, too. Finally, the boys receiving the intensive services had significantly higher IQ gains than those who did not receive the services.

Potential school dropouts were examined in a follow-up report by Karnes, Zehrbach, Jones, MacGregor, and George (1966). They found that after receiving prevocational treatment program services, only 13 of 91 young people left school. Also, the experimental subjects were absent fewer days from the classroom than were similar students who had not received services. They did less "job hopping" and were more "realistic" in selecting vocational goals, also.

Gulledge (1969) conducted a follow-up study (9 to 14 months after closure) to measure client sustention for victims of poverty and dependency. Three out of four of those placed after receiving services from a vocational rehabilitation agency program, which concentrated on delivering services to the disadvantaged living in economically-depressed areas, were still working at the time of follow-up; meanwhile, only 1 in 12 of those closed as "other than employed" was found to be working. The weekly earnings of the employees, determined after 8 to 14 months of employment, increased about $10 for those who were both disabled and disadvantaged and about $20 for those disadvantaged but not disabled. Of all those clients who were employed in the follow-up study, over half had changed employment since closure, usually for a better wage.

Neff (1959) published the results of a follow-up study of clients served by the Chicago Jewish Vocational Service at the Vocational

Adjustment Center (VAC). The purpose of the study was to (a) obtain precise information on the clients' post-VAC work experience, (b) identify factors that appear to be associated with work adjustment, and (c) test prediction made on each client at the time of discharge from VAC. All of the VAC "graduates" of a given calendar year were interviewed in their homes one year after termination (n = 197). The results of the follow-up study showed that 68% of the clients were placed on jobs after leaving VAC; of these, 35% had worked for all or most of the 12-month period prior to follow-up; another 16% worked for half or three-fourths of the time; and the remaining clients had been employed from a few days to six months. Although age, nature of disability, and previous employment experience were not related to the outcome of rehabilitation, the attitude of the family was a significant factor in the clients' vocational adjustment. In general, the clients' future "employability" had been accurately predicted by the rating instruments used by the staff members.

England and Lofquist (1958) followed-up 91 rehabilitated physically-handicapped persons previously referred for job placement to determine their level of vocational adjustment. Of the total group, 60 were employed full-time, 7 part-time, 19 were unemployed, and 5 were no longer available for employment. Of those working full-time, more than two-thirds held jobs at the same level or higher than they did before they became disabled.

Komisar (1960) conducted a follow-up study of patients discharged from a community center after receiving rehabilitation services. Of the patients discharged in the "improved" status, approximately 75% maintained the gains they had made while at the center until the time of follow-up. Of cases (the researchers did not indicate which status these cases had) where possible employability was a consideration, slightly more than 58% achieved their objective. Komisar indicated that the reasons for the sustention were factors of the patients' age, disease, disability, and attitudes; income, marital status, homemaking responsibility, and sex were also related factors.

Chronic psychiatric patients were followed-up during a five-year period in a study by Brooks and Deane (1967). They found that the

discharged former patients tended to remain single and preferred a continuing association in some form with a hospital or institution after services had been terminated. The results indicated that 70% were discharged and still living in the community, 20% had been out of the hospital at least once, and 10% had never been out during the five-year period under investigation. The implication is that almost 70% of chronic psychiatric patients can be placed in the community if adequate transitional and vocational rehabilitation services are provided. Ongoing programs for chronic psychiatric patients reduces their numbers within the hospital—a desirable result, of course.

Williams (1967) evaluated a collaborative treatment program for alcoholics two to three years after the subjects were released from a hospital treatment program. He found that 80% of the clients had had jobs at closure and had retained them until the time of follow-up. Over one-fourth reported going six months or longer before having had an alcoholic drink; 58% reported not drinking for 24 weeks or more after closure; 66% reported that drinking did not interfere with their lives in the period of time between closure and follow-up. These rehabilitated recipients of DVR services from the special alcoholic rehabilitation programs tended to remain employed; there was a positive relationship between having received vocational rehabilitation services and being employed at follow-up for both men and women. The study indicated also that two to three years after the patients were discharged from treatment, four-fifths were still employed. Over one-fourth of these individuals held the same job at follow-up as they had held at closure.

In a five-year follow-up study of psychiatric patients, Sinnett (1965) found that 41% were still in active treatment, compared to 46% who had been discharged and were living in the community (13% had died or could not be located). Only one-half of those living outside in the community were employed; one-third reported full-time employment for one year or more during the five-year period under investigation. Most provided information which revealed that they had "few or no" close friends and that they were "minimally involved" with social activities. An interesting result of Sinnett's study was that the physician's "liking" of the patient was

one of the most consistently accurate predictions of "adequate" vocational outcome. It is obvious from the results of this study, however, that psychiatric patients present a greater challenge to the rehabilitation counselor than most other disability groups.

Summary

The number of follow-up studies of former clients of vocational rehabilitation is small indeed; the question of the determinants of successful rehabilitation sustention following the termination of service requires further study. The one criterion that has consistently been used is the extent to which former clients maintain themselves in employment. Generally speaking, it can be concluded that 75% to 80% of former rehabilitants are employed at the time of follow-up, one to five years after closure, although the majority change jobs with greater frequency than the nondisabled, usually for a better wage. The data were not as positive for individuals vocationally-handicapped because of psychiatric disorders.

METHODOLOGY

Subjects

The subjects of this study were 103 males and 90 females (n= 193) who had been closed as "rehabilitated" by the Wisconsin Division of Vocational Rehabilitation (DVR) as part of the Wood County Project. In addition to having been closed as "rehabilitated," a subject must have:

(a) completed the Personal History Survey (PHS) at the time of acceptance;
(b) completed the Rehabilitation Client Follow-up Survey (RCFS) at the time of the first follow-up shortly after closure;
(c) completed the Longitudinal Follow-up Survey (LFS) administered two to four years after closure; and
(d) not contracted a completely new disability or vocational handicap since his original closure date (reoccurrence of the previous handicap was not considered a new problem).

Of the more than 1300 rehabilitants in Wood and Eau Claire counties, only 310 had completed the RCFS and a mailing address could be located for only 290 of these people. These 290 rehabilitants were sent the LFS by mail; 69.3% (201) returned the questionnaire. But because of the occurrence of completely new disabilities, eight subjects were excluded. Thus the final sample was 193 rehabilitants.

Goodness of Fit analyses using 13 client characteristics indicated that the final sample of 193 subjects was representative of what might be expected by random sampling from the original number of rehabilitants.

Instrumentation

The instruments used for this study were the Personal History Survey (PHS), Rehabilitation Client Follow-up Survey (RCFS), Wisconsin Data Record Form (DVR-2), Longitudinal Follow-up

Survey (LFS), and Rehabilitation Status Scale. The first three have been described in detail in Wright, Reagles, and Butler, An Expanded Program of Vocational Rehabilitation: Methodology and Description of Client Population (1970).

Longitudinal Follow-up Survey

The LFS (see Appendix B) was designed by the senior author for the UW-RRRI and utilizes a format identical to both the PHS (administered at acceptance) and the RCFS (administered shortly after closure). It was designed as a longitudinal measure to be administered one or more years after the RCFS. It contains a large number of items identical to those which appeared on the instruments administered at acceptance and after closure but also a number of other items of relevance to the longitudinal nature of the survey.

Rehabilitation Status Scale

The items of the Rehabilitation Status Scale were built into both the PHS, RCFS, and subsequently included in the LFS. This 20-item scale has been statistically developed through item analysis and shown to measure a single underlying variable—"rehabilitation level" (Reagles et al., 1970b).

Because the measurement of rehabilitation sustention was based on scores yielded by the Rehabilitation Status Scale, concern for the reliability and validity of the Scale is important. In respect to reliability, the reciprocal averaging (RAVE) technique used in the development of the Scale provides an indication of the internal consistency by analysis of variance, i.e., the Hoyt reliability coefficient. In addition, the pattern of item weights assigned to each item by RAVE analysis can be observed for reversals and/or inconsistencies. Also, item-to-total score correlations and inter-item correlations can be computed to assist in the determination of item appropriateness. Undesirable items can thus be discarded, changed, or replaced until the maximum indication of reliability is obtained.

The construct validity of the Rehabilitation Status Scale has been established in a previous research project carried out by the UW-RRRI (Reagles et al., 1970b). "Construct validity" is used in the sense of Cronbach and Meehl's (1955) definition of the term. According to this definition, the construct validity of a psychological scale cannot be expressed by a single coefficient. Rather, it is dependent upon all of the variables associated with the construct and upon the relationship between these variables and the construct. In addition, construct validity also implies independence from variables which theoretically would not be expected to relate to the measured construct.

In the above sense, research with the Scale indicates that it possesses a satisfactory degree of construct validity. RAVE analysis of rehabilitated clients' responses to the items of the Scale revealed that these items measured the postulated single underlying variable—rehabilitation level—and that the clients' responses to the Scale items were quite consistent. The items of the Scale also discriminated among the clients in terms of the relative degree of rehabilitation status. The relationships between clients' scores on this Scale and certain rehabilitation client, process, and outcome variables which would be predicted on the basis of the meaning of this Scale's constructs were found, on the whole, to be significant.

Data Collection

The administration and data collection of the PHS and RCFS have been described elsewhere (Wright, Reagles, & Butler, 1970). While the RCFS was administered both by field personnel of the UW Survey Research Laboratory and by mail, the LFS was administered exclusively by mail to qualified rehabilitants in Wood and Eau Claire counties. All of the subjects were offered $5.00 as payment for the return of the completed LFS questionnaires; the UW-RRRI research staff had found in the past (Wright et al., 1970; Reagles, Wright, & Butler, 1970a and 1970b) that even this small amount greatly enhanced the return rate while not altering the reliability of the responses.

A letter accompanying the questionnaire asked the subjects to respond within 10 days' time. If the subject had not responded within 10 days, a second questionnaire was sent along with the same offer of $5.00 for completion. The total time allowed for data collection was approximately one month. The principal problem encountered in data collection on a longitudinal basis (in some instances, nearly six years) was that of subject mobility. This was especially true for those subjects classified as "culturally handicapped." Future researchers who anticipate longitudinal data collection would do well to plan a strategy for continual updating of mailing addresses (which is, incidentally, an expensive project).

Determination of Rehabilitation Sustention

The measurement of rehabilitation sustention originates from a desire to learn how well rehabilitated clients sustain their relative level of rehabilitation following the termination of services. The measurement of sustention is therefore based on "level" scores obtained for the same subjects after successful rehabilitation closure (L_2) and again at the time of follow-up (L_3), in this instance two to four years after successful closure. Sustention is said to exist when the Rehabilitation Status Scale score computed at the time of follow-up (L_3) is *equal to or greater than* the level score computed after successful closure (L_2). Thus, in order for sustention to exist, the L_3 score may be greater than the L_2 score, equal to it, but not significantly lower than it. If the level score at L_3 is significantly less than the score at L_2 ($L_3 < L_2$), rehabilitation *regression* is said to exist.

The operational definition of *sustention* as the difference between level scores at L_2 and L_3 presents a departure from the original effort to develop an index for the measurement of *rehabilitation sustension* (Gay, 1970) and is recognized as a practical limitation imposed by the sample size and not a limitation of the methodology. Gay, in his original work, incorporated a third level score, L_1, which was computed for each subject at the time of acceptance for rehabilitation services. Conceptually, to examine only

the difference between L_2 and L_3 overlooks an important aspect of the measurement—*what* is being sustained. In order to observe the relative change between L_2 and L_3, it is necessary to know the level at which the client was functioning (as measured by the Rehabilitation Status Scale) prior to the provision of services (L_1). To ignore this pre-rehabilitation level score altogether can present a dilemma of practical (but not theoretical) significance: even though sustention by definition is observed ($L_3 \geq L_2$), the L_2 score may be significantly lower than the L_1 score; in this instance, the individual is "sustaining" regression, an undesirable situation from the practicing rehabilitationist's point of view.

The practical disadvantage in the use of the third score in the operational definition of sustention is the large number of subjects required for a meaningful interpretation. There are a minimum of nine individual categories that can be derived from three scores among three points in time. The small number (193) of subjects in this investigation does not allow for an operational definition of sustention using three level scores, assuming an identical distribution as that obtained in the present study. Despite this limitation, all three level scores (L_1, L_2, L_3) have been presented diagramatically by handicap and sustention groups (see Appendix A).

Computation of Level Scores

Three level scores (L_1, L_2, L_3) were computed for each subject by using the Rehabilitation Status Scale. The derivation of the scores required the method of reciprocal averages, as suggested by Horst (1936) and adapted for computer use—the RAVE program—by Baker and Martin (1968). This program is feasible only if an underlying variable assumedly exists which is common to all items analyzed. The investigator assigns an *a priori* set of item response weights to initiate an iterative process which converges to a weighting scheme for the Scale items, thus maximizing the internal consistency of the instrument. A detailed description of this process can be found in Reagles et al. (1970b) and Gay (1970).

Sustention Groups

The subjects were first divided into two groups: those who sustained their level score from closure to follow-up (i.e., the L_3 score was equal to or greater than the L_2 score) and those who did not. To determine what subjects fit into which group, the researchers had to decide what would be a "significantly lower or higher" score at the time of longitudinal follow-up.

To assume confidence at the .10 level—that there is only a 10% chance of selecting a subject as having a significantly lower or higher L_3 than L_2 score when, in fact, he did not—the following procedure was used:

(a) The standard error of the difference, SE(diff.), was computed by pooling the standard error of measurement, SE(meas.), for L_2 and L_3, thus:

$$SE(diff.) = \sqrt{(SE_{L_2})^2 + (SE_{L_3})^2}$$

substituting the proper values:

$$SE(diff.) = \sqrt{(5.68)^2 + (5.69)^2}$$

$$SE(diff.) = 8.04$$

(b) This "z" value for a confidence interval with .90 confidence is 1.29. This "z" value was then multiplied by the SE(diff.) to produce a new estimated SE(meas.): (1.29) (8.04) = 10.37, rounded off to 10.0.

It was thus determined that an individual's score at L_3 must differ from his score at L_2 by at least 10 points in order to be confident, at the .10 level, that a true difference existed.

Thus, the total subject group could be divided into those who sustained their rehabilitation closure level and those who did not. The above procedure was considered conservative for an investigation

of this nature and risks a large Type II error—the possibility of determining that the scores do not differ significantly when in fact they do. However, this interpretation of risks may have a different meaning in other statistical tests where a confidence level of .10 is considered large.

Once the significant point difference was established, the group which sustained its rehabilitation level from closure to follow-up was sub-divided: those who had significantly higher (at least +10 points) scores at L_3 than at L_2 and those who maintained the same basic score (i.e., there was less than 10 points difference between L_2 and L_3). The result was the identification of three sustention groups used in this investigation: (a) the S+ group—those whose L_3 scores were at least 10 points *higher* than their L_2 scores; (b) the S= group—those whose L_3 scores were *within* 10 points of their L_2 scores; and (c) the S- group—those whose L_3 scores were 10 or more points *lower* than their L_2 scores. Figure 1 presents a diagram of these three groups.

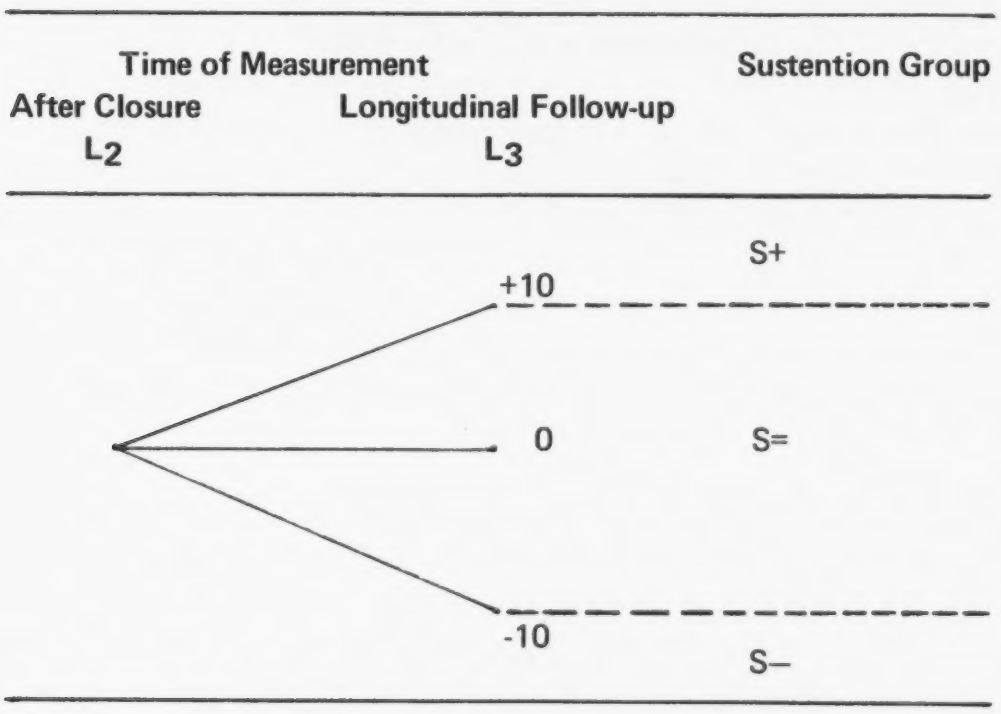

Fig. 1 Diagrammatic determination of three sustention groups.

Independent Variables

The primary independent variables were: (a) client status or characteristics, (b) areas of the rehabilitation process, and (c) the amount of time between the measurement of L_2 and L_3, i.e., between closure and follow-up.

The literature reviewed indicated that the client's sex, age, educational level, handicap type, and marital status were frequent indicators of rehabilitation outcome (see especially Eber, 1966, and Reagles et al., 1970b). In addition to these variables, this investigation included the Shipley-Hartford IQ measurement and the Wide Range Achievement Test—arithmetic and reading sub-scales—since intelligence level has also been found to be related to outcome (Reagles et al., 1970b; Wright, Reagles, & Butler, 1969). These two tests were administered to the subjects at the time they applied for rehabilitation services.

For the process variables investigated in this study, the research literature indicated that the costs of service, extent of counselor intervention, and other variables generally related to the rehabilitation process were frequently associated with rehabilitation outcome. For example, Reagles et al. (1970b) found that the number of contacts by the counselor for vocational planning and the number for follow-up and placement services were significantly and positively related to rehabilitation gain.

Finally, the amount of time between closure and follow-up was investigated. If time had been found to have a significant relationship to sustention, then it would have to have been controlled for and investigated more thoroughly.

Analysis of the Data

Because the primary dependent variable—sustention—required a classification composed of nominal categories, chi-square tests of association were used to investigate the relationship of sustention to other nominally-scaled variables. In instances where variables had scaling which was ordinal or interval in nature, rank order or analysis

of variance techniques were used. Two basic comparisons were made in the analyses: (a) between the individual items on the Rehabilitation Status Scale and the subjects' handicap type (cultural or medical) and county of residence (Wood or Eau Claire); and (b) between the individual items on the Rehabilitation Status Scale and the sustention groups (S+, S=, S–). For both of these comparisons, any differences between the culturally and medically handicapped were of primary concern. In addition, the handicap and sustention groups were compared *within the individual items* of the Scale to determine what was being sustained.

RESULTS

The first concern of the UW-RRRI researchers was whether the Rehabilitation Status Scale was adequate for assessing rehabilitation sustention. Although the 20-item Scale was found to be a satisfactory measure of rehabilitation status and gain in a prior study(Reagles et al., 1970b), its utility for a measure of sustention required further investigation using the scores obtained at longitudinal follow-up.

Use of the reciprocal averaging technique (RAVE) indicated that the derived Hoyt reliability coefficients were highly satisfactory (see Table 1). In addition, the item-to-total score correlations were adequately high, especially at long-term follow-up.

Table 1
Statistical Characteristics of the Rehabilitation Status Scale at Three Points of Measurement

Characteristic	Acceptance	Closure	Follow-up
Hoyt reliability coefficient	.76	.80	.87
Item-to-total score correlations (range)	.16-.71	.20-.64	.32-.80
Mean	67.3	74.8	73.8
Standard deviation	12.8	12.9	15.9
Range of Scores	44-103	45-109	40-105

A second concern was whether the total scores (on the Rehabilitation Status Scale) could be interpreted as a measurement of the same underlying variable or construct at the three points in time. This is comparable to determining whether several judges are using the same criterion to evaluate the performance of a group of subjects. The item-to-total score correlation coefficients for each item on the Scale were placed in rank order, from highest to lowest, for each point in time. Thus, each item could have a rank between 1 and 20 for acceptance, closure, and follow-up. The sum of the ranks

for each item was then determined. For example, the item *weekly earnings* had the fifth highest correlation with the total score at acceptance and the highest at closure and follow-up. It was ranked as 5, 1, 1, and the sum of these ranks is 7 (see Table 2). The Kendall Coefficient of Concordance technique was used to determine the significance of the similarity between the rankings at the three points in time. The Kendall Coefficient of Concordance computation produced a value, W = .88, which was highly significant (see Table 2) and indicated that the items were ranked in the same relative *order* at each measurement. The Rehabilitation Status Scale, it was concluded, was measuring the same construct (rehabilitation level or status) at all three points of measurement.

The next step was to determine which items of the Scale contributed most to the total score. The sum of the ranks (Table 2) showed that the five items contributing most to the total scores were: (a) the number of hours the individual worked each week, (b) weekly earnings, (c) the person's primary income source, (d) work status, and (e) the number of activities the individual participated in where he worked. The first four items were classified as "vocational," the last as "extra-vocational."

In general, the extra-vocational items contributed less to the total score (had consistently lower rankings) than the vocational items. This information, in addition to knowledge that the scores reflected the same construct at the three points in time, indicates that the Rehabilitation Status Scale can be adapted for use by both the researcher and practitioner to gather helpful data about client status and change in the vocational and extra-vocational areas.

Selected Independent Variables

Once it was determined that an adequate procedure to measure rehabilitation sustention could be developed, the researchers investigated the relationship between sustention and a number of selected independent variables. The first of these was *number of months since successful closure.* The relationship between this variable and sustention was considered to be of primary importance, for a

Table 2

Rehabilitation Status Scale Items: Item Ranks & Total Score Correlations

Item	Sum of Ranks	Item-to-Total *r*'s		
		Acceptance	Closure	Follow-up
Hours worked per week	6.5	.705	.628	.772
Weekly earnings	7	.586	.638	.796
Primary income source	8	.667	.635	.709
Work status	11	.626	.569	.732
Activities where client works (number)	12.5	.598	.628	.693
Activities with family (hours/week)	19	.472	.511	.580
Activities with others in community (hours/week)	24	.402	.488	.475
Prediction of status in one year	27	.338	.424	.586
Membership in clubs & organizations (number)	29	.425	.376	.433
Activities where client works (hours/week)	30	.406	.443	.400
Activities with others in community (number)	34	.391	.388	.423
Activities with family (number)	36	.245	.391	.446
Activities by self (hours/week)	40.5	.373	.265	.429
Public assistance — amount	42.5	.331	.366	.374
Activities in clubs & organizations (hours/week)	44	.312	.283	.429
Physical health — client's evaluation	49	.233	.338	.390
Client's trouble in finding a job	52	.311	.198	.385
Client's chances of getting preferred job	52	.211	.341	.350
Activities by self (number)	52	.297	.306	.323
Mental health — client's evaluation	54	.156	.247	.392

Kendall Coefficient of Concordance, $W_2 = .88$
Converted to, $X^2 = 50.07$, $df = 19$, $p < .001$

significant linear relationship would indicate the need to control this variable on any subsequent analyses.

The number of months since successful closure ranged from 21 to 49, with a mean of 33.7 months. An analysis of variance test found no significant relationship between the number of months and sustention. For those subjects who maintained the same rehabilitation level at follow-up as they had had at closure (S= group), the mean number of months since closure was 30.81; for those who made significant gains from closure to follow-up (S+ group), the mean was 29.87; and for those who had significantly lower scores at follow-up than at closure (S– group), the mean was 31.98. Thus, it appeared that sustention could not be predicted from knowledge of the number of months since successful closure and controlling for this variable was considered unnecessary.

For the research objectives of the Wood County Project, the variable of primary concern was *codiscode,* a hybrid classification of the subjects' county of residence (Wood or Eau Claire) and handicap type (medical or cultural). Table 3 presents the numbers of subjects in each sustention group (S+, S=, S–) by codiscode (handicap type).

The chi-square analysis used to test for a relationship between sustention and this hybrid of handicap type and research area yielded no significant differences. In general, then, the sustention patterns of the Wood County culturally handicapped (WC-C), Wood County medically handicapped (WC-M), and Eau Claire County medically handicapped (EC-M) were similar.

In addition to *number of months since successful closure* and *codiscode,* a number of client and rehabilitation process variables were also studied for a possible relationship to sustention, using analysis of variance and chi-square analysis. Although only one of these analyses showed a significant difference among the three sustention groups (see Table 4), some interesting trends emerged. In general, the subjects who significantly increased their rehabilitation level score from closure to follow-up (S+) were younger, had higher IQs, scored higher on the Wide Range Achievement Test (WRAT) arithmetic and reading subscales, were involved in the rehabilitation process longer, and cost slightly less in total to rehabilitate. Those

subjects who obtained significantly lower scores from closure to follow-up (S–) had the opposite characteristics.

Table 3
Sustention Group Membership by Handicap Group Membership (Percentages)

Sustention Group	Handicap Group WC-C	WC-M	EC-M	Total
S+	21.2	19.6	18.4	
	11	*18*	*9*	*38*
S=	46.2	60.9	59.2	
	24	*56*	*29*	*109*
S–	32.7	19.6	22.4	
	17	*18*	*11*	*46*
TOTAL	*52*	*92*	*49*	

$X^2 = 3.92, p > .05, df = 4$
Note — Italicized numbers denote cell frequencies.

For this and all following tables, the handicap group abbreviations are:

WC-C = Wood County culturally handicapped
WC-M = Wood County medically handicapped
EC-M = Eau Claire medically handicapped

As indicated in Table 4, a significant difference was found between the mean amounts of case service monies for *maintenance* for the different sustention groups. The agency spent more money ($743) on maintenance for those individuals who made significant gains between closure and follow-up (S+) than it spent ($251) on those who regressed from closure to follow-up (S-). Also, the amount of money spent on "training" approached significance. Again, more money for training was spent on the group which made gains. It

appears that the greater the amount of money spent for maintenance and training during the rehabilitation process, the higher the probability that sustention and even gain will occur from closure to follow-up.

Table 4
Means: Selected Variables by Sustention Group

Variable	Sustention Group S+	S=	S–
Age at acceptance	28.63	31.61	32.41
Shipley IQ	100.54	94.62	93.66
WRAT-A Grade level	7.76	7.09	7.00
WRAT-R Grade level	11.05	10.20	10.65
Time: Acceptance to Closure (mos.)	9.91	8.79	7.39
Case Service Costs (dollars)			
Diagnosis	32.39	40.41	27.85
Medical	164.90	141.20	189.00
Training	460.90	315.60	401.40
Maintenance*	742.70	514.60	251.10
Workshop	2378.00	1001.00	1184.00
TOTAL	522.90	577.90	551.80

* $p < .05$

Four client variables were analyzed by chi-square technique to determine their relationship to sustention. These were: sex, marital status, number of dependents, and highest grade completed. Although these variables have been frequently associated with rehabilitation outcome, no statistically significant relationships between sustention and these variables were found in this study. However, because of the innovative nature of this research, a contingency table (Table 5) has been presented.

Table 5
Client Variables by Sustention Group (Frequencies)

Variable	Sustention Group S+	S=	S–	Total
Sex				
Male	19	64	20	103
Female	19	45	26	90
Marital Status				
Married	17	48	19	84
Widowed, separated, divorced	8	24	13	35
Never married	13	37	14	64
Number of Dependents				
None	12	26	14	52
1 – 3	17	58	20	95
4 or more	9	25	12	46
Highest Grade Completed				
8 or less	3	27	8	38
9 – 11	12	26	19	57
12	21	50	11	82
13 or more	2	6	8	16

Even though no significant differences were found, some trends of practical significance did emerge for these client variables. The group which regressed from closure to follow-up (S–) had a slightly higher percentage of females (57%) than either the group which gained (50%) or the group which maintained (41%) the level score. This group (S–) also contained a higher percentage (28%) of widowed, separated, or divorced persons than the group which gained (21%) or maintained (22%) its closure level. Finally, the group which regressed (S–) had a higher percentage (58%) of subjects with less than a high school education than did the other two groups (40% and 49% respectively).

Individual Scale Items

Because the Rehabilitation Status Scale and the 20 items comprising it were at the basis of the entire study of sustention, the researchers thought it essential to investigate the performance of (a) the handicap groups and (b) the sustention groups on each item of the Scale at three points in time: acceptance, closure or shortly after, and longitudinal follow-up. The results of this investigation are presented in the following sections, with the discussion of the Scale items divided into two categories—"vocational" and "extra-vocational."* This categorization follows the procedure of Reagles et al. (1970b) in which the authors stated that "such categorization was, however, arbitrary and items classified as 'extra-vocational' certainly may have vocational implications" (p. 42).

Scale Item by Handicap Group Membership

One of the primary interests of the UW-RRRI research staff in assessing the impact of the expanded agency was to determine if the three handicap groups (WC-C, WC-M, EC-M) performed differently on the Rehabilitation Status Scale and/or on each individual item of the Scale. It has been shown, for example, that the culturally handicapped made significantly greater gains between acceptance and closure than did either of the medically-handicapped groups (Reagles et al., 1970b). The researchers wanted to know whether this type of trend would also emerge in the assessment of sustention.

Vocational Items

The four items contributing most to the total score—*number of hours individual works each week, weekly earnings, primary source*

*A detailed analysis of each of the 20 items of the Scale in relationship to both the handicap groups and the sustention groups is available upon request from the UW-RRRI, 415 West Gilman Street, Madison, Wisconsin, 53706. The discussion of the results here concentrates on the most general and most practical findings relative to the rehabilitation counselor's role and functioning.

of support, and *employment status*—were all of a "vocational" nature (see Table 2). The majority of subjects in each handicap group increased their scores from closure to follow-up on each of the vocational items, although a few minor differences did appear.

The results for the item which contributed most to the total score, *the number of hours the individual works each week,* indicated that between 70% and 75% of the former DVR clients in all groups were working some hours per week at follow-up (see Table 6). The percentage of clients working over 40 hours per week increased from closure to follow-up for both medically-handicapped groups but not for the culturally disadvantaged; however, the WC-C group did increase in the number of clients working between 20 and 40 hours per week.

Table 6
Hours/Week Client Works by Handicap Group (Percentages)

Response Categories	Time of Measure	Handicap Group WC-C	WC-M	EC-M	Total
Over 40 hours	Acceptance	21.2	26.1	14.3	21.8
	Closure	50.0	43.5	51.0	47.2
	Follow-up	42.3	52.2	55.1	50.3
20 – 40 hours	Acceptance	5.8	16.3	16.3	13.5
	Closure	15.4	22.8	16.3	19.2
	Follow-up	23.1	14.1	12.2	16.1
Less than 20 hours	Acceptance	5.8	8.7	8.2	7.8
	Closure	0.0	5.4	4.1	3.6
	Follow-up	3.8	4.3	6.1	4.7
Not working	Acceptance	67.3	48.9	61.2	57.0
	Closure	34.6	28.3	28.6	30.1
	Follow-up	30.8	29.3	26.5	29.0

The *amount of weekly earnings* continued to increase for all three handicap groups (see Table 7). In addition, more medically-

Table 7
Means: Amount of Weekly Earnings (in Dollars) by Handicap Group

Time of Measure	Handicap Group WC-C	WC-M	EC-M	Total
Acceptance	8.42	19.44	14.29	15.13
Closure	63.23	54.68	53.02	56.57
Follow-up	67.88	69.17	61.02	66.67

disabled subjects in both agencies listed their *primary income source* as themselves at follow-up than had at closure (see Table 8). At the same time, however, more clients in all three handicap groups listed their primary source of support as public assistance payments; and, of course, the *amount of assistance* (the item fourteenth in importance to the total score) also increased (see Table 9).

Nevertheless, neither the increase in the percentage of clients depending on public assistance nor the concomitant increase in the amount of payment at follow-up is significant. And when the percentage depending on assistance (welfare) at follow-up is compared to the percentage at acceptance, the impact of rehabilitation services can certainly be appreciated. For all three groups, the percentage of clients with primary dependency on welfare payments at follow-up was less than half the percentage at acceptance.

The one major difference between the handicap groups, then, was the receipt of (and amount of) public assistance payments. A closer look at the data indicated that a larger percentage of the WC-C group was receiving assistance payments at follow-up as compared to the medically-handicapped groups; also the mean amount of assistance received by the culturally disadvantaged was higher than that received by either medically-disabled group. However, the data

Table 8

Primary Source of Support by Handicap Group (Percentages)

Response categories	Time of measure	Handicap Group WC-C	WC-M	EC-M	Total
Earnings of client	Acceptance	15.4	21.7	8.2	16.6
	Closure	53.8	54.3	42.9	51.3
	Follow-up	51.9	55.4	55.1	54.4
Earnings of another family member	Acceptance	48.1	53.3	44.9	49.7
	Closure	25.0	22.8	26.5	24.4
	Follow-up	28.8	25.0	16.3	23.8
SSDI benefits	Acceptance	0.0	7.6	10.2	6.2
	Closure	3.8	9.8	16.3	9.8
	Follow-up	0.0	6.5	8.2	5.2
Other insurance	Acceptance	0.0	0.0	0.0	0.0
	Closure	1.9	1.1	2.0	1.6
	Follow-up	0.0	0.0	2.0	0.5
Welfare payments	Acceptance	26.9	8.7	18.4	16.1
	Closure	9.6	2.2	2.0	4.1
	Follow-up	11.8	4.3	4.1	6.2
Pension payments	Acceptance	0.0	4.3	0.0	2.1
	Closure	0.0	3.3	2.0	2.1
	Follow-up	0.0	2.2	0.0	1.0
Other or not reported	Acceptance	9.6	4.3	18.4	9.3
	Closure	5.8	6.5	8.2	6.8
	Follow-up	7.7	6.5	14.2	8.8

Table 9
Means: Amount (in Dollars) of Public Assistance (Per Month) by Handicap Group

Time of Measure	Handicap Group WC-C	WC-M	EC-M	Total
Acceptance	46.92	8.39	23.96	22.72
	17	*8*	*6*	*31*
Closure	18.47	1.37	4.94	6.85
	5	*2*	*2*	*9*
Follow-up	24.12	7.84	9.16	15.16
	9	*6*	*4*	*19*

Note—Italicized numbers denote cell frequencies.

also showed that 89% of the culturally-disadvantaged welfare recipients were women with dependent children. The implication is that they returned to welfare not because of the inadequacy of vocational rehabilitation services but because of their own personal-familial situation. Indeed, when the culturally disadvantaged were asked, on the Longitudinal Follow-up Survey, whether they were having difficulty finding a job, the majority answered "no." It appears, rather, that they were having problems maintaining employment outside the home. Because the majority of subjects who returned to welfare were AFDC mothers, it is possible that inadequacy of child care facilities or additional births may have been a factor. One of the communities associated with the Wood County Project saw the need for providing for child care and established a Child Care Center for the Project (see Wright et al., 1969) which subsequently became a permanent community facility. However, the other major city in the county did not have such a facility.

The item fourth in importance to the total score was *employment status.* There were no important differences among the three handicap groups: four out of five (79.8%) rehabilitants in all three groups retained their independence from closure to follow-up

(Table 10). This one fact alone, coming two to four years after the termination of services for the subjects, supports the effectiveness of the expanded vocational rehabilitation program in alleviating handicaps to employment and the counselors' efforts to help the client with *vocational*—as opposed to personal or social—adjustment.

Table 10
Client Employment Status by Handicap Group (Percentages)

Response Categories	Time of Measure	Handicap Group WC-C	WC-M	EC-M	Total
Wage Earners	Acceptance	13.5	26.1	10.2	18.1
	Closure	88.5	80.4	79.6	82.4
	Follow-up	67.3	69.6	65.3	67.9
Homemakers & Unpaid Family Workers	Acceptance	28.8	15.2	12.2	18.1
	Closure	11.5	18.5	20.4	17.1
	Follow-up	13.5	9.8	14.3	11.9
Unemployed, Student, or Other	Acceptance	57.7	58.7	77.6	63.2
	Closure	0.0	0.0	0.0	0.0
	Follow-up	17.3	19.6	16.3	18.1
No response	Acceptance	0.0	0.0	0.0	0.0
	Closure	0.0	1.1	0.0	0.5
	Follow-up	1.9	1.1	4.1	2.1

Extra-vocational Items

The "extra-vocational" items, in general, had low correlation with the client's total score on the Rehabilitation Status Scale (see Table 2). The extra-vocational item highest in importance (fifth for the total score) was the *number of activities the client participates in where he works.* The increase for this item, however, was only slight for all three handicap groups. The most dramatic increase at follow-up was in the *mean amount of time the subjects spent in activities where they work:* the total subject group was spending

nearly twice as many hours each week in such activities at follow-up than they had spent at closure. The extra-vocational items, as a group, seemed to indicate that all three groups of clients were socializing more with others; this trend is considered a desirable outcome of rehabilitation services.

Scale Item by Sustention Group Membership

The subjects were classified as belonging to one of three sustention groups. First, there was the S+ group (n = 38) in which the subjects scored 10 or more points higher at follow-up than they did at closure on the Rehabilitation Status Scale. Second, there was the S = group (n = 109), the largest group which was composed of those subjects who obtained essentially the same score (within 10 points) at follow-up as they had at closure. And third, there was the S– group (n = 46) in which the subjects scored 10 or more points lower at follow-up than they did at closure. Appendix A is a schematic representation of the mean scores of each of the three sustention groups at the three points in time—acceptance, closure, and follow-up. It presents a "profile" for each sustention group.

The researchers were concerned about the possibility of a "regression effect" influencing the number of subjects in each sustention group. If such an effect were operative, for example, those subjects who had an extremely low score at closure would have a much higher probability of significantly increasing their follow-up score than those subjects who had a high score at closure. This might apply to the S+ group which scored lower at the second measurement and the S– group which scored higher at the second measurement. To determine whether such regression effects were operative, an analysis of variance was conducted using the second measurement scores and the sustention profiles. No significant difference ($F = 2.64$, $df = 2/190$, $p > .05$) was found among the mean scores for the three profiles at the second measurement, indicating that regression effects were not significantly contaminating the sustention group classifications. There is no question, however, that with the use of repreated measures, those

individuals who score the highest at any point of measurement have the greatest probability of obtaining lower scores upon subsequent measurements.

In addition to examining each item in terms of sustention group membership, the researchers were also interested in comparing the medically disabled in Wood and Eau Claire Counties and the culturally and medically handicapped in Wood County for classification within the sustention groups. Table 3 presents the percentage of subjects within each handicap group belonging to each sustention group.

The culturally disadvantaged demonstrated the most divergence for they were the most represented in both the S+ and S– groups. The two medically-handicapped groups were about equally represented in all three sustention groups. Because there were more culturally than medically handicapped in the S– group, the client characteristics of these subjects were reviewed. It was found that the WC-C subjects in the S– group were predominantly separated or divorced females with dependent children who had previously received AFDC payments and who had to go back to welfare within the follow-up period. But despite the incidence of return to public assistance, rehabilitation services proved highly successful with the culturally disadvantaged, for they were the most represented in the sustention group which *continued* to gain after closure. It appears that those members who regressed did so because of circumstances *outside* of the rehabilitation process per se. Continued supportive and interventive follow-up long after closure may be a necessity for these clients.

Vocational Items

The four vocational items which contributed most (Table 2) to the total score for the Scale effectively discriminated among the three sustention groups. For the S+ group (those who gained between closure and follow-up), 84.2% were working over 40 hours per week and none was not working whereas only 19.9% of the S– group were working over 40 hours per week and 63% were not

working. For the S= group, 51.4% were working more than 40 hours per week and 24.8% were unemployed at follow-up (Table 11). Moreover, the S+ group had increased its weekly earnings considerably (58%) from closure to follow-up; the S= group made slight increases; and the earnings of the S– group decreased by over 30% from closure to follow-up (Table 12).

Concomitant with the data on hours worked and weekly earnings, the results indicated that 78.9% of the subjects in the S+ group reported that their own earnings were their primary source of support in contrast to only 26.1% of the S– group which reported this. None of the S+ group was receiving SSDI benefits, other insurance, welfare, or pension payments whereas 34.8% of the subjects in the S– group were depending on the earnings of someone else in the family for their primary income source and an additional 15.2% were depending on welfare payments (Table 13). Fully 73.9% of those 46 rehabilitants who scored lower on the Scale at follow-up than at closure were in a dependency status. If regression is indicated by new or renewed dependence on public assistance, as is implied by the data, then counselors must seek the reasons for a client's return to public assistance and take action to prevent such a return if possible. Further research needs to be conducted to determine what intervention strategies might be used on a follow-up basis to prevent regression to a dependency status. Nevertheless, only 20 individuals from the total sample were actually receiving any form of public assistance at follow-up; this is only slightly more than 10% of the sample (compared to 16% at the time of acceptance for services).

The data for the clients' employment status further supports the adequacy of the Scale in measuring rehabilitation gain and sustention (Table 14). Specifically, 100% of the subjects in the S+ group, 67.9% in the S= group, and 41.3% in the S– group were wage earners at follow-up. Of all the subjects, nearly 80% of them were either wage earners, homemakers, or unpaid family workers, indicating that the majority of rehabilitants do sustain their employment status from closure to follow-up.

Table 11

Hours/Week Client Works by Sustention Group (Percentages)

Response Categories	Time of Measure	Sustention Group S+	S=	S–	Total
Over 40 hours	Acceptance	21.1	22.0	21.7	21.8
	Closure	39.5	47.7	53.2	47.2
	Follow-up	84.2	51.4	19.6	50.3
20 – 40 hours	Acceptance	10.5	14.7	13.0	13.5
	Closure	26.3	16.5	19.6	19.2
	Follow-up	15.8	18.3	10.9	16.1
Less than 20 hours	Acceptance	2.6	10.1	6.5	7.8
	Closure	7.8	1.8	4.3	3.6
	Follow-up	0.0	5.5	6.5	4.7
Not working now	Acceptance	65.8	53.2	58.1	57.0
	Closure	26.3	33.9	23.4	30.1
	Follow-up	0.0	24.8	63.0	29.0

Table 12

Means: Amount of Weekly Earnings (in Dollars) by Sustention Group

Time of measure	Sustention Group S+	S=	S–	Total
Acceptance	13.91	16.49	12.78	15.13
Closure	57.73	56.43	55.98	56.57
Follow-up	91.11	69.32	38.98	66.67

Table 13

Primary Source of Support by Sustention Group (Percentages)

Response categories	Time of measure	Sustention Group S+	S=	S–	Total
Earnings of client	Acceptance	18.4	17.4	13.0	16.6
	Closure	39.5	53.2	56.5	51.3
	Follow-up	78.9	57.8	26.1	54.4
Earnings of another family member	Acceptance	50.0	45.9	58.1	49.7
	Closure	31.6	22.9	21.7	24.4
	Follow-up	13.2	22.9	34.8	23.8
SSDI benefits	Acceptance	2.6	9.2	2.2	6.2
	Closure	10.5	11.9	4.3	9.8
	Follow-up	0.0	8.3	2.2	5.2
Other insurance	Acceptance	0.0	0.0	0.0	0.0
	Closure	0.0	0.9	4.3	1.6
	Follow-up	0.0	0.9	0.0	0.5
Welfare payments	Acceptance	21.1	14.7	15.2	16.1
	Closure	2.6	2.8	8.7	4.1
	Follow-up	0.0	4.6	15.2	6.2
Pension payments	Acceptance	2.6	2.8	0.0	2.1
	Closure	5.3	1.8	0.0	2.1
	Follow-up	0.0	0.9	2.2	1.0
Other or not reported	Acceptance	5.2	10.1	10.9	9.3
	Closure	17.5	6.5	4.3	6.8
	Follow-up	7.9	5.6	19.6	8.8

Table 14
Client Employment Status by Sustention Group (Percentages)

Response Categories	Time of Measure	Sustention Group S+	S=	S–	Total
Wage Earners	Acceptance	15.8	22.9	10.9	18.1
	Closure	78.9	83.5	82.6	82.4
	Follow-up	100.0	67.9	41.3	67.9
Homemakers & Unpaid Family Workers	Acceptance	18.4	15.6	23.9	18.1
	Closure	18.4	16.5	17.4	17.1
	Follow-up	0.0	11.0	22.9	11.9
Unemployed, Student, or Other	Acceptance	65.8	61.5	65.2	63.2
	Closure	0.0	0.0	0.0	0.0
	Follow-up	0.0	17.4	34.8	18.1
No response	Acceptance	0.0	0.0	0.0	0.0
	Closure	2.6	0.0	0.0	0.5
	Follow-up	0.0	3.7	0.0	2.1

Extra-vocational Items

There were no meaningful changes from closure to follow-up for any of the extra-vocational items. All sustention groups slightly increased in participation in activities at place of employment, clubs, and organizations. In contrast, all three sustention groups decreased in the hours per week spent in activities by themselves. Even though these changes were slight, the trend seemed to be toward increased socialization with others.

When viewed together, not only are extra-vocational and vocational items effective in distinguishing between sustention groups, but they also point out divergent characteristics within one group. The culturally-disadvantaged rehabilitants were the most represented in both the S+ and S– groups. On the one hand, the

culturally handicapped apparently have the ability to become independent as a result of rehabilitation services and even gain in their independence and self-sufficiency. On the other hand, others in the culturally-handicapped group have the tendency to return to a dependency status after the receipt of services. A closer look at those culturally-handicapped rehabilitants who gained and who regressed showed that the latter were predominantly separated or divorced females with dependent children who had reapplied for public welfare assistance after closure. As indicated by their responses to the items of the Scale, they were not having trouble finding a job but rather experiencing difficulty in maintaining employment outside the home. The implication is that they could not keep a job because of the problem of inadequate child care facilities. Solving this problem is the challenge of a governmental vocational rehabilitation program that deals with the total adjustment of all handicapped persons and their dependents, at all ages, and with all their limitations and values. The Wood County Project demonstrated that with our present knowledge and increased facilities and staff, four out of five of all handicapped persons rehabilitated can either maintain their closure level to follow-up or increase that level.

CONCLUSIONS AND SUMMARY

The present study investigated the lasting effects of rehabilitation services—*sustention*—as related to the provision of these services. Sustention is defined as the degree to which the effects of successful rehabilitation services are maintained or enhanced over an extended period of time, two to four years after case closure in this study. A procedure, based on the measurement of rehabilitation client status (Reagles et al., 1970b), was developed to assess sustention levels and to study the possible relationship of selected client and rehabilitation process variables to sustention.

The subjects were 103 males and 90 females who had been closed as "rehabilitated" by the Wisconsin DVR as part of the Wood County Project and who had *not* contracted any *new* handicapping condition since the time of closure. Sustention was assessed by computing the difference among the clients' scores on the Rehabilitation Status Scale administered at acceptance, at closure, and at longitudinal follow-up. If the score at longitudinal follow-up was either the same as or significantly higher than the score at closure, the subject was said to have "sustained" the adjustment status achieved at closure. If the score at follow-up was significantly lower than the score at closure, the subject was said to have "regressed" in adjustment status. The computed difference between the level scores was used to develop three sustention categories: (a) those individuals whose rehabilitation level increased after closure, (b) those individuals whose closure level was maintained, and (c) those individuals whose closure level regressed.

The present investigation has some limitations which should be taken into consideration when applying the results of this study to other populations. The vast majority of clients in Wood County were white and resided in rural areas. Therefore, the findings must be generalized with caution to other vocationally-handicapped groups, e.g., impoverished blacks living in an urban ghetto. Nevertheless, the assumption can be made—based on many other studies of culturally-handicapped individuals—that the common problems of disablement and disadvantagement are as important in the

adjustment process as are race, ethnic group membership, and geographic area of residence.

The most revealing finding of this study was that traditional rehabilitation services for the medically and culturally handicapped not only improve their vocational and personal status but that this improved adjustment is sustained for at least several years following the termination of services. Four out of five of all the rehabilitated subjects either maintained the vocational and extra-vocational adjustment achieved at closure or improved this adjustment at longitudinal follow-up, two to four years after closure. Moreover, the results provided important evidence to demonstrate that traditional rehabilitation services are as effective in removing vocational handicaps and sustaining vocational and personal adjustment for the culturally handicapped as for the medically handicapped who have for many years received services.

Contributing most to the composite measure of the client's rehabilitation status were items which were classified as "vocational" in nature, i.e., improved adjustment was basically in the area of employment status for both handicap groups. It was found that the items which discriminated most consistently between those subjects who sustained their rehabilitation level from closure to follow-up and those who did not were: the number of hours the individual worked each week, weekly earnings, primary source of support, work status, and the number of activities in which the individual participated where he worked. Between 70% and 75% of all subjects were working some hours each week at follow-up, and the mean amount of earnings increased for both handicap groups as well. In addition, the proportion of clients who reported their primary support as welfare payments at follow-up was half as large as the proportion reporting this at the time of acceptance. These findings uphold the concept of vocational adjustment as the primary goal of rehabilitation. However, the importance of extra-vocational indicators of rehabilitation status (e.g., social and familial activities in which the client participates) should not be underestimated; they, too, are an essential aspect of total adjustment, for as vocational adjustment is enhanced, extra-vocational adjustment is positively

affected as well.*

Furthermore, the length of time between closure and longitudinal follow-up was not found to be related to sustention. There was no systematic relationship between sustention groups and the amount of time elapsed since successful case closure. Many rehabilitants—in fact, the majority in this study—continued to gain or at least sustain their status over a considerable length of time (up to four years in this instance). The apparent lasting effect of vocational rehabilitation services for all vocationally-handicapped persons should mandate program expansion in general and specifically the acceptance of the culturally handicapped for the services of the state-federal program.

Variations, of course, existed in sustention between the culturally- and medically-handicapped rehabilitants. Only one rehabilitation *process* variable was significantly related to sustention: the agency spent more money on maintenance for those individuals who made significant gains between closure and follow-up than for those who regressed. Maintenance payments typically are involved when a major interventive service such as training, physical restoration, or workshop services is provided, and this finding adds valuable support for the provision of major services to vocationally-handicapped individuals when the need exists. Most of the variations between the two handicap groups seemed to be more a function of the clients' personal-familial characteristics than anything else. The subjects who significantly increased their rehabilitation status from closure to follow-up were younger, had higher IQs, and scored higher on the achievement test. Conversely, the subject group whose rehabilitation status decreased significantly had a greater proportion of females, more widowed, divorced, or separated persons, and a greater percentage of individuals with less than a high school education.

The one major difference found between the medically- and culturally-handicapped rehabilitants was in the receipt of public

*A detailed analysis of each of the 20 items of the Scale in relation to both the handicap and sustention groups is available, upon request, from the UW-RRRI.

assistance payments: a greater proportion of the culturally handicapped were receiving public assistance payments (and the mean amount was greater) at the time of follow-up than the medically handicapped. However, these culturally-handicapped public assistance recipients were predominantly divorced mothers with several dependent children. Therefore, in addition to their concern for employment outside the home, these mothers also had the responsibility of caring for their children at home.

It appears that the receipt or non-receipt of public assistance influenced the type and number of individuals in two of the three sustention groups. The culturally handicapped were the most represented in both the group which regressed and the group which made significant gains between closure and follow-up. Since the culturally-handicapped group as a whole had more women with dependent children than the medically handicapped, it is not surprising that they were the most represented in the group which regressed. On the other hand, the culturals were also the most represented in the group which continued to gain after closure: they obviously have the ability (even more than the medically handicapped according to the present data) to become completely independent as a result of rehabilitation services. In general, then, the culturally handicapped did not present an insurmountable challenge to their counselor or to the agency. Yet, there is one segment of the culturally-handicapped group—mothers who have dependent children and who are the sole heads of their households—which must be dealt with somewhat differently than most other clients. Counselors must understand the danger of these clients' returning to dependency due to their child-care responsibilities after the termination of services and, therefore, must develop intervention strategies to obviate this problem. It has been demonstrated that all of the rehabilitants *wanted* to work: they applied for and received services and were placed in employment. But it is necessary to monitor cases long after closure where there is high risk of renewed dependency.

The present investigation supports previous findings by providing evidence that traditional vocational rehabilitation services are indeed effective in alleviating cultural as well as medical

handicaps to employment. And it presents evidence to demonstrate that the impact of these services for both handicap groups is sustained over an extended period of time. Moreover, the present investigation partially delineates areas of functioning in which rehabilitation counselors should provide emphasis to enhance sustention. The results indicate that some of the rehabilitated clients need more extensive follow-up after closure for possible re-intervention by the rehabilitation counselor. In this way, one aspect of the counselor's role which would receive greater emphasis than it does at present would be that of periodic inquiries into the status of clients who have given some indication that continuing, long-term follow-up is necessary. Importantly, an adaptation of the measurement of rehabilitation status as developed in this and previous UW-RRRI investigations (Hammond, Wright, & Butler, 1968; Reagles et al., 1970b) would provide an efficient, accurate measure of such status.

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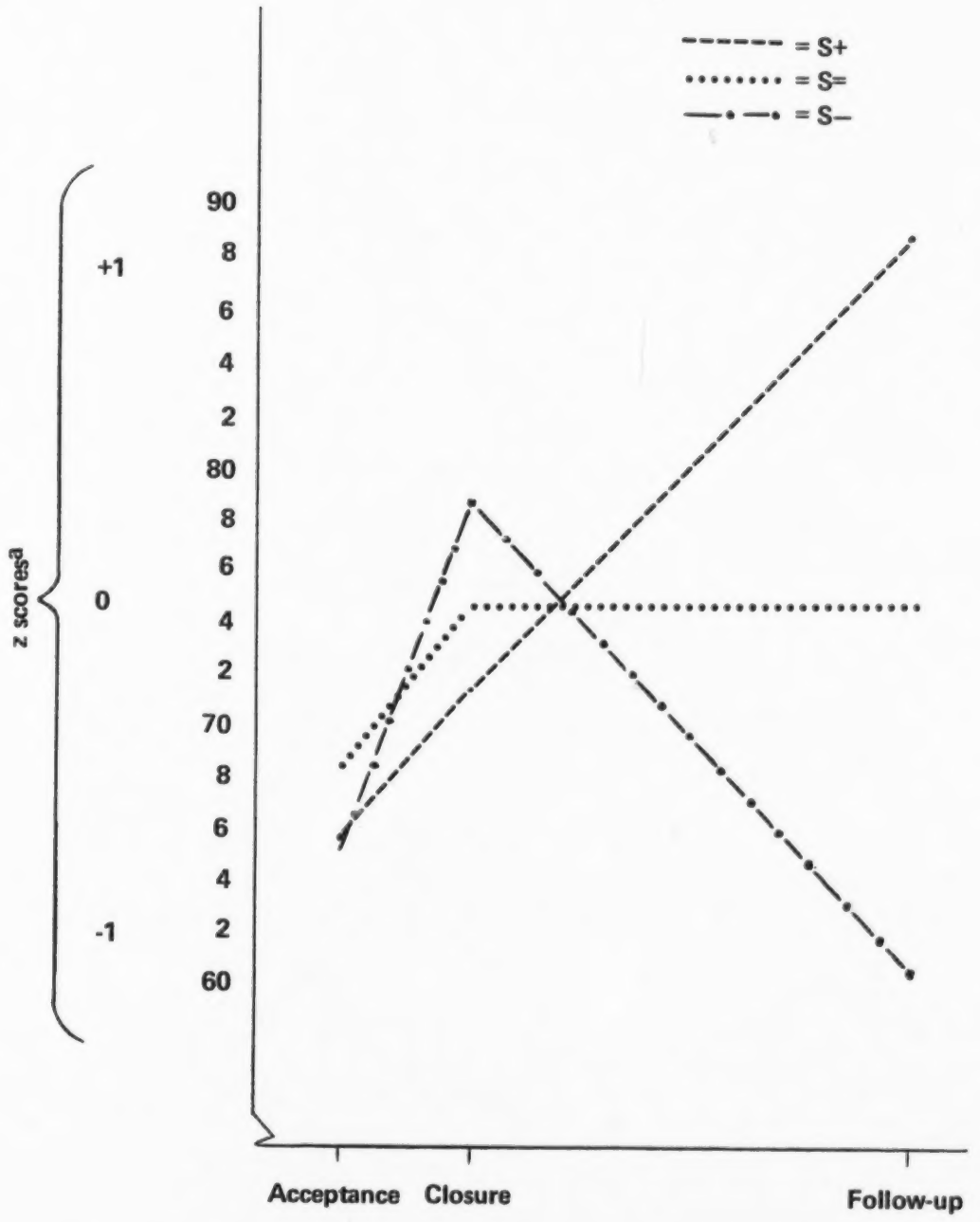
APPENDIX A

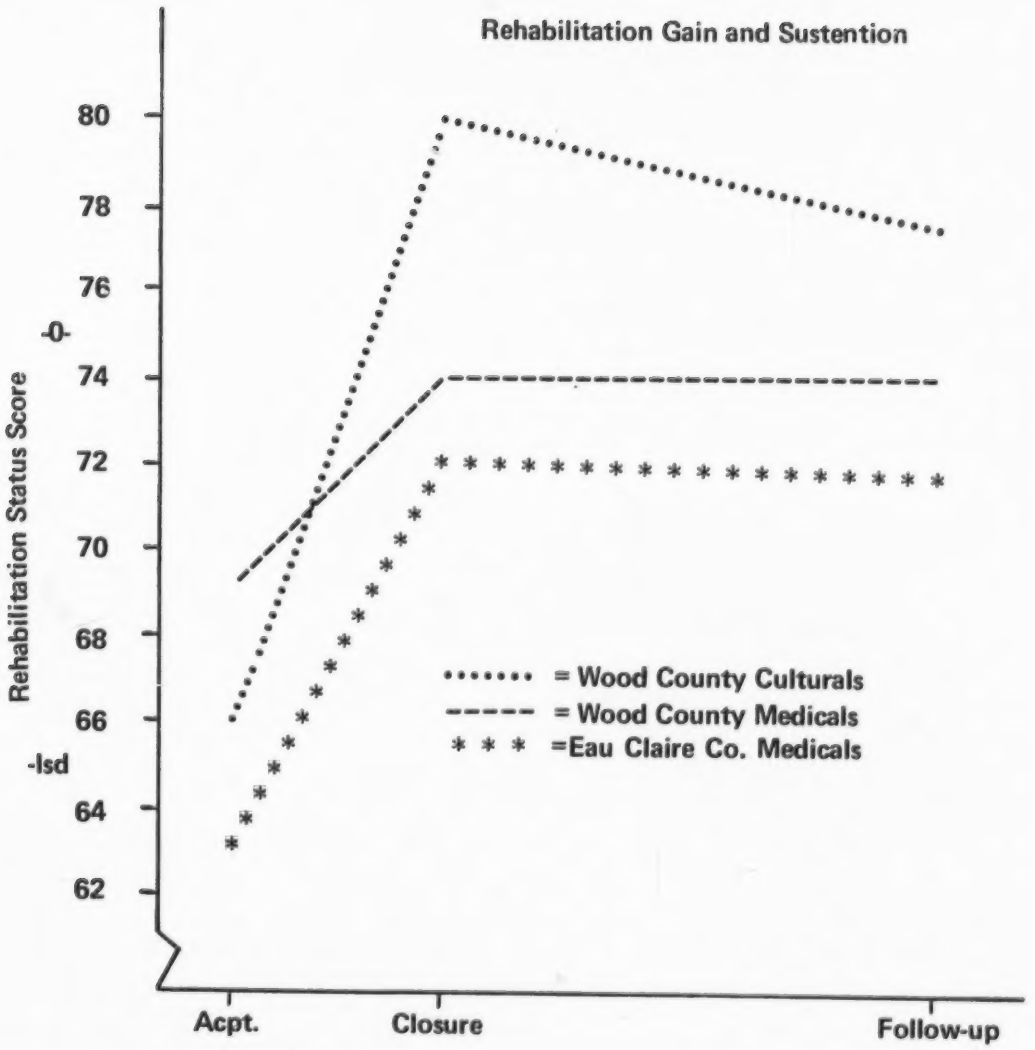
DIAGRAMMATIC PRESENTATION OF

LEVEL SCORES BY HANDICAP AND SUSTENTION GROUPS



Profiles of Sustention Group Means by Three Points of Measurement

[a]z-scores computed using Level Scale scores at closure


Rehabilitation Gain and Sustention
Rehabilitation Status Score
80
78
76
-0-
74
72
70
68
66
-lsd
64
62
Acpt.
Closure
Follow-up
..... = Wood County Culturals
----- = Wood County Medicals
* * * =Eau Claire Co. Medicals

APPENDIX B

THE UNIVERSITY OF WISCONSIN

LONGITUDINAL FOLLOW-UP SURVEY

THE UNIVERSITY OF WISCONSIN
LONGITUDINAL FOLLOW-UP SURVEY

Name _____ Date _____
Last First Middle

_____
Street or R.F.D. No. City

Phone _____

When you first became eligible for vocational rehabilitation services, it was because you had some type of disability or work problem at the time. Have you had any **completely new or different** disability or work problem

since _____ ?

15 1 Yes 0 No

If yes, please explain _____

16 Are you having trouble finding a job at this time?
0 No 1 Not looking for work 2 Yes

17 If yes, what is the main reason? (Circle the most important one)
1 Physical disability
2 Emotional problems
3 Lack of appropriate work experience
4 Union requirements or restrictions
5 Lack of formal education
6 Age
7 Lack of job skills or technical training
8 No appropriate job available
10 Other (Explain) _____

18 Vocational rehabilitation services are given to people who have some kind of job handicap or limitation in employment. You were eligible to receive rehabilitation services because you had some type of job handicap. How severe is this handicap now?
3 Very severe 2 Moderately severe 1 Not severe 0 I had no handicap

19 Do you think your disability affects your being able to get a job?
1 Yes 0 No

What effect do you think your disability has in this matter? _____

What kind of work would you like to have? _____

20 How certain are you that this is the work you really want?
3 Quite certain 2 Fairly certain 1 Not at all certain

21 If the work you prefer is available, what would be your chances of getting such a job?
4 Almost certain 2 50-50 0 Very little chance 3 Very good 1 Not so good

22 ☐ We're interested in the different clubs and organizations people may belong to. Do you happen to belong to any of the groups like those on this list? Which ones do you belong to? (Circle as many as you belong to)

1 Any parent-teacher group
2 Church-connected groups (Usher's Club, Ladies Aid, etc.)
3 Fraternal lodge or auxiliary
4 Neighborhood clubs; Community Center (including the YMCA, YWCA)
5 Card clubs or social clubs
6 Groups of people of the same nationality
7 Labor unions
8 Veteran's association
9 Service club (Rotary, Lions, etc.)
10 Professional or business groups
11 Civic organizations (participation in charity drives, Red Cross, etc.)
12 Sports team
13 Participation in political activities, a political club or party
14 Other organizations (Describe) _____

23 24 What is the **total** number of hours you spend each week on the activities you circled in the above list?

_____

25 How many hours do you work per week, including the time it takes you to go to and from where you work?
0 Not working now 1 Less than 20 hours 2 20-40 hours 3 Over 40 hours

What do you do on your job? (BE SPECIFIC) _____

26 How long have you had your present job?
1 Less than a month 2 One to 6 months 3 6 months to a year 4 Over a year

27 Do you get any enjoyment, aside from the money you earn, out of your present job?
1 Yes 0 No

Why do you say so? _____

28 If at some time in the future you needed to get a job, do you feel that
1 you should find the job for yourself?
2 your counselor should find the job for you?
3 some other agency should get a job for you?

29 We realize you do not know exactly what you will be doing in the future; however, which of the following do you feel you will most likely be doing 1 year from now? (Circle **one**)

4 Employed full time
3 Employed part time
2 Self-employed
1 Training or schooling (full or part time)
0 Unemployed

If you circled 2, 3, or 4 above, write in the job you have in mind _____

If you circled 1, what training or schooling do you have in mind? _____

30 How is your **general** physical health? Aside from any disability that you might have, how would you describe your physical health?
1 Excellent 2 Good 3 Fair 4 Poor 5 Don't know

31 ☐ Which of the following activities do you take part in **by yourself**? (Circle those which apply)

1 Outdoor activities (such as: fishing, hiking, hunting, etc., by yourself)
2 Attending school, classes, taking courses or training of some type
3 Hobbies and crafts; for example, model building, woodworking and refinishing, stamp or coin collecting, photography, etc.
4 Arts: playing music, taking part in dramatics, painting or drawing, etc.
5 Reading: books, magazines, newspapers
6 Other individual activities (Describe) _____

32 33 What is the **total** number of hours you spend each week on the activities you circled in the above list?

_____

34 ☐ Which of the following activities do you take part in **along with the other members of your family?**
1 Social activities (such as: visiting other people, going to parties or clubs together, etc.)
2 Family games
3 Family discussions
4 Attend church with family
5 Outdoor or sports activities with family (picnics, hikes, etc.)
6 Other family projects (Describe)

_____

35 36 What is the **total** number of hours you spend each week on the activities you circled in the list above?

_____

37 How did your present family feel about your applying for rehabilitation?
0 Don't know or don't have family 1 Disapproved 2 Didn't care 3 Approved

38 ☐ If you work, which of the following activities do you take part in **where you work?**
1 Belong to some type of club or organization composed of people where I work or in my profession
2 Belong to a union; attend union meetings
3 Socialize after work hours with fellow workers
4 Other activities related to your work (Describe)

_____

39 40 What is the **total** number of hours you spend each week on the activities you circled in the list above?

_____

41 ☐ Which of the following activities do you take part in **with other people in your community?**
1 Sports: football, basketball, tennis, golf, etc.
2 Outdoor activities: hunting, fishing, hiking, etc.
3 Indoor activities: bowling, table tennis, dancing, cards, etc.
4 Organized social activities: social clubs, service clubs, card clubs, church-sponsored social activities
5 Other social activities (Describe)

_____

42 43 What is the **total** number of hours you spend each week on the activities you circled in the list above?

_____

44 How is your general mental health or emotional adjustment?
1 Excellent 2 Good 3 Fair 4 Poor 5 Don't know

45 Do you now belong to a church (synagogue)?
1 Yes 0 No

46 About how often do you usually attend religious services? (Circle number of answer)
1 Every day
2 At least once a week
3 A couple times a month
4 A few times a month
5 Once a year
6 Less often than once a year
7 Never

47 What is the main source of support for you and your family? (Choose one)
1 Your earnings
2 Earnings of someone else in your family
3 Social Security Disability Insurance
4 Other insurance
5 Welfare payments
6 Pension payments
7 Other (Explain) _____

48 What were your **total** earnings last week (the last full week prior to this last week)?
49
50 $_____ per week

51 Please circle **only one** of the following:
At the present time, a description of my work situation is:
1 A wage or salaried worker **or** self-employed
2 Self-employed but business managed by a state agency
3 Homemaker or unpaid family worker **only**
4 Not working–a student or other

What is the name of your place of work? (THEY WILL NOT BE CONTACTED)

Name: _____

City: _____

52 In the past year, how much time have you been working in one of the first three descriptions above?
1 All of the time
2 More than half of the time
3 Half of the time
4 Less than half of the time
5 None of the time

53 In the past year, how much time have you been **available** for work **but not** working? (Do not count school or training time or vacations)
5 None of the time
4 Less than half of the time
3 Half of the time
2 More than half of the time
1 All of the time

54 Are you receiving any type of public assistance or welfare at this time?
1 Yes 0 No
55
56 If yes, how much each MONTH? $_____
57

58 And, which type?
1 Old age assistance
2 Aid to blind
3 Aid to permanently disabled
4 General welfare assistance
5 Aid to families with dependent children (AFDC)
6 Any combination of these
7 Unknown

59 If you have a job now, have you received any promotions or increase in money based on your work in that job?
1 Yes 0 No

60 How would you describe your present job according to money, importance and improvement over past jobs?
1 Worse than any other job I have had
2 Worse than most jobs I have had
3 About the same as my past jobs
4 Better than most jobs I have had
5 Better than any job I have had

61 Did you receive any vocational or educational training or schooling with financial help from Vocational Rehabilitation?
0 No 1 Yes
If **no**, skip the rest of the questions and thank you.
If **yes**, please continue.

Please describe the training you received _____

_____

62 Did you complete the entire training course planned? 0 No 1 Yes

If no, please explain: _____

63 Did your training or education help you find or keep a job? 0 No 1 Yes

64 Are you presently working on a job for which you were trained? 1 Yes 0 No

Please explain: _____

_____

65 Are you satisfied with the training you received?
1 Yes 0 No

Why do you say so? _____

_____

Thank you for your cooperation.

WCP FOI

PUBLICATIONS OF THE UNIVERSITY OF WISCONSIN REHABILITATION RESEARCH INSTITUTE

WISCONSIN STUDIES IN VOCATIONAL REHABILITATION

Wright, G. N., & Butler, A. J. *Rehabilitation Counselor Functions: Annotated References.* Monograph I, 1968. (459 pages)

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Wright, G. N., Smits, S. J., Butler, A. J., & Thoreson, R. W. *A Survey of Counselor Perceptions.* Monograph II. 1968. (73 pages)

Presents the raw data resulting from an interview survey of rehabilitation counselors in a five-state area. Focuses on counselor perceptions of problems associated with various counselor functions and proposed solutions to these problems.

Thoreson, R. W., Smits, S. J., Butler, A. J., & Wright, G. N. *Counselor Problems Associated with Client Characteristics,* Monograph III. 1968. (46 pages)

Describes counselors' perceptions of client characteristics which impede counseling and vocational planning and relates these perceptions to selected counselor characteristics. Includes a review of the literature relevant to client problems.

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Wright, G. N., Reagles, K. W., & Butler, A. J. *An Expanded Program of Vocational Rehabilitation: Methodology and Description of Client Population.* Monograph XI. 1970. (158 pages)

Provides an overview of the clients and methodology of the Wood County Project, with an emphasis on the culturally disadvantaged.

Reagles, K. W., Wright, G. N., & Butler, A. J. *Correlates of Client Satisfaction in an Expanded Vocational Rehabilitation Program.* Monograph XII. 1970. (67 pages)

Describes an investigation of client satisfaction—through a scale developed by the researchers—as it relates to the expansion of services to all medically- and culturally-handicapped clients.

Reagles, K. W., Wright, G. N., & Butler, A. J. *A Scale of Rehabilitation Gain for Clients of an Expanded Vocational Rehabilitation Program.* Monograph XIII. 1970. (90 pages)

Includes a detailed description of the development of a scale to measure rehabilitation gain. Describes an investigation of vocational and extra-vocational gain attributable to receipt of vocational rehabilitation services by medically- and culturally-handicapped clients.

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Katz, S., Wright, G. N., & Reagles, K. W., *The Impact of an Expanded Vocational Rehabilitation Program Upon Intra-Agency Processes and Procedures.* Monograph XIV. 1971. (72 pages)

Investigates agency functions—caseload characteristics (number and types of clients referred, accepted, served, and rehabilitated), counselor services, case processing time, and the costs and patterns of purchased services—to determine the effect that expanded services had on these functions.

Wright, G. N., & Reagles, K. W. *The Economic Impact of an Expanded Program of Vocational Rehabilitation.* Monograph XV. 1971. (84 pages)

Investigates the ratio of benefits-to-costs for an expanded program, taking into consideration many economic factors with a detailed discussion of the methodological concerns relative to benefit-cost analyses of social welfare and manpower programs. Discusses the reduction in public assistance payments in the county as a result of the project.

Copies of these monographs may be obtained, free of charge, from
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